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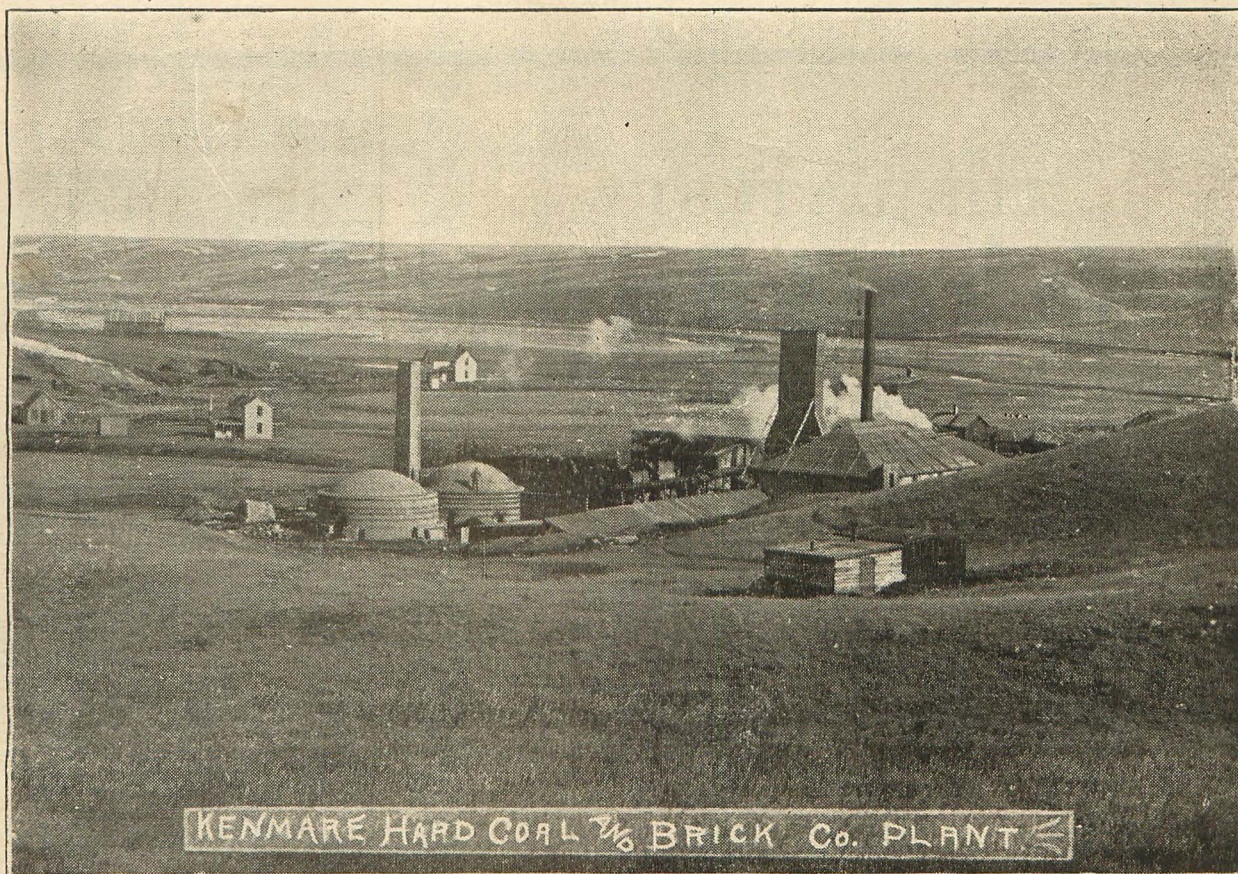
"THE NORTH DAKOTA FARMER FOR NORTH DAKOTA FARMERS"

Alex Alin

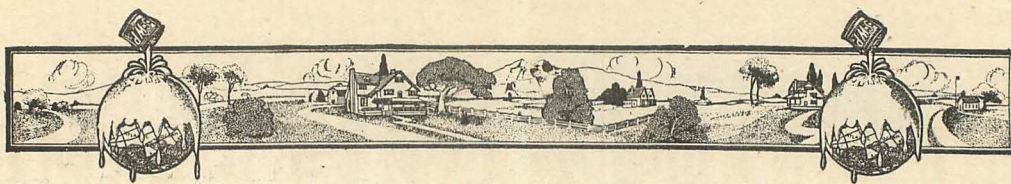
Vol. 11, No. 6
LISBON, N. D.

DECEMBER 15, 1909

50 Cents a Year
FARGO, N. D.



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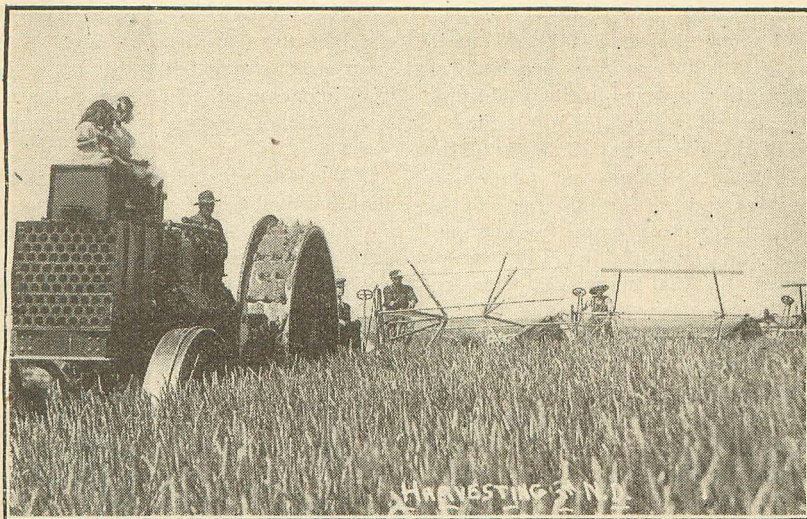
THE NORTH DAKOTA FARMER

Vol. 11, No. 6

LISBON and FARGO, N. D., DECEMBER 15, 1909

50 Cents a Year

HARVESTING SCENE



This picture was taken at the farm of Grant Lamphere, South of Westhope, and shows how he harvested his immense crop of wheat.

OF GENERAL INTEREST

THE FARMER'S PROFIT

By J. H. Worst, Pres. A. C., N. D.

The farmer naturally and sensibly works for profit. He cannot afford to work and lose. He can scarcely afford to work for a bare living wage. At all events, a bare living wage will not enable him to get on in his business and lay up money for old age or for the education of his children.

In order to make quick money, many farmers make the mistake of spreading their energies over too many acres. Their aim seems to be to make a small profit off of each one of a great many acres of land by doing a small amount of work on each acre. In order to cover as many acres as possible, they plow shallow, often turning an 18-inch furrow with a 14-inch plow, then drag the ground once or twice instead of three or four times. To hasten the work, the seed is put in without being cleaned or graded. What is the result? If the season is remarkably favorable, a fair crop, say fifteen bushels per acre, may be realized. If, however, the season is less favorable, or bad, the crop barely

pays cost of production or proves a failure. Taking one year with another, such farming barely pays cost of production. The profits of the good years are eaten up by the partial or total failures of the bad ones.

It is true that a net profit of only \$1 per acre on a 5,000-acre wheat farm makes a good yearly income, but the margin is so small that the chances are quite as good to lose as to make \$5,000 by that system of farming. Besides it would pay the farmer quite as well and be twice as good for the community if, by giving the ground somewhat better cultivation and using the best obtainable seed, \$2.00 net per acre instead of \$1.00 were realized, on half the acreage. It would at any rate leave 2,500 acres for some other farmer to cultivate and hence the community would enjoy twice the wealth.

Under any circumstances, until a certain yield of wheat is produced, there is no profit—only cost of production. Suppose we put the cost of production at 10 bushels per acre. This must pay interest on investment, taxes, depreciation, labor, etc. Now, if the yield of

wheat is 15 bushels per acre, all the profit per acre must come out of the five bushels—the amount that each acre yields above the cost of production. Suppose, however, by applying one-half more labor, the yield is forced up to 20 bushels per acre. In the latter case the profit is doubled. That is to say, one 20-bushel crop is as profitable as two 15-bushel crops. The profit in the last five bushels is produced at the expense of just half the labor of the five bushels next below it, and the farmer accomplishes as much in one year as he otherwise would in two years.

The argument is overwhelmingly in favor of deeper plowing, repeated and thoro dragging, and using the purest and cleanest seed obtainable. Moreover, no farmer can afford to farm his land otherwise. The risk is all on the side of poor farming. Besides, good farming is cumulative. The best results are not obtained the first year, nor the second, but the yield improves right along from year to year.

The consensus of opinion as expressed in numerous able addresses by men of large experience, at the Billings Dry Farming Congress, was to the effect that dry farming is simply **good farming**. If good farming can be made profitable in localities where the precipitation is light, it can be made much more profitable where the rainfall averages ample. If the disadvantage of limited rainfall can be overcome by good farming, so can the disadvantage of almost any other climatic or soil defect. Scientific farming takes into account the defects as well as the advantages of every locality and manages the soil accordingly. It is simply mixing brains with agriculture.

Some localities average rather dry others rather wet, while in other localities the land is inclined to blow. Scarcely any locality is without some drawback, and unless the farming operations are carried on with direct reference to the particular defect that time and experience demonstrates to be present, and with the view of overcoming such defect, the best results cannot be obtained. **Abundant labor**, therefore, should be placed at the point

where the profit per acre can be most largely increased.

I am convinced that if, on the average, every acre seeded to wheat were given one additional dragging, the profits from that extra dragging would return many fold larger profits than any other equal amount of time and labor put on the land.

ARE OUR SOILS GROWING RICHER

That national agricultural department "professor" or "expert," who has discovered that the farm soil in the United States and in all the rest of the world is increasing in fertility in spite of the undisputed truth that more is being taken out of it in crops than is being put into it in fertilizers, should make an observation tour of the farming regions. On such a tour, provided that he is not deaf, blind, insane, stupid or ignorant, he would see much to shake his belief in his own remarkable theory. He would find "abandoned" farms whose soil, thru overcropping and underfertilizing for generations, has been exhausted so far that it can produce only a quarter of the crops it formerly produced. He would find quarter-ton and half-ton crops of hay grown on soil that fifty years ago grew two-ton and three-ton crops per acre. He would find in the west millions of acres of corn and wheat lands growing in 1909 only half the crops they grew in 1859 and 1869. He would find in the south millions of acres of land covered with giant sumachs and sassafras and weeds, that used to grow large crops of cotton, corn, sweet potatoes, peanuts, sugarcane and vegetables, and that now will not grow enough of these crops to repay the planters for their work, time and seed in planting. Wherever he might go, he would see incontestable evidence of the absurdity of his queer and untenable theory. If his theory mean anything practical, it must mean that land may be tilled indefinitely without fertilization, and retain its fertility. All the land that has been cropped with no fertilizing or with insufficient fertilizing has run down and out. All the land he would find that has increased in fertility has been fertilized from the start. He would not find in the United States a single acre of land, that has not been fertilized during tillage, that is as fertile and as capable of growing large crops in 1909 as it was in 1859, or in 1869. He seems to imagine that the soil is inexhaustible, and it would be useless to call his attention to the agricultural situation in Spain, in Russia, in China and in other countries in which farming in general has been carried on for generations on the "soil robbery"

method. Mere facts and truths would have no meaning to the faddist chasing his own fantastic idea over the domain of agriculture. The farmer can get some idea of the idea of that "professor" by computing the amounts of potash, nitrogen and phosphoric acid removed from the farm soils of the United States yearly in producing 720,000,000 bushels of wheat, 2,000,000,000 bushels of corn, 900,000,000 bushels of oats, 220,000,000 bushels of potatoes, 200,000,000 bushels of apples, 60,000,000 tons of hay, 170,000,000,000 pounds of milk, and 13,000,000 bales of cotton, and in feeding 73,100,000 cattle, 22,000,000 dairy cows, 24,000,000 horses, 4,250,000 mules, 57,000,000 sheep and 56,000,000 swine, besides the soil fertility consumed in the production of all the other crops of the country. Most of these essential elements of the soil, potash, nitrogen and phosphoric acid, once out of the soil and in the crops, are lost to the soil forever, and only a small part of them can ever be returned to the soil. Yet this remarkable "professor" finds the soil thus drained increasing in fertility in spite of the enormous drainage and the hopeless wastage! If Secretary of Agriculture James Wilson makes up his mind to "resign" and "retire," it is to be hoped that he will refuse to be separated from certain members of his "official family," and will insist on taking them along with him.—New York Farmer.

OUR RESOURCES

It is a well known fact that no purely agricultural country ever acquires great wealth. The first stage of development of a new country is along agricultural lines where the land is suitable for that purpose, as the country opens up and the lands are settled, it is found that manufacturing on a small scale must be undertaken if the people are to have their repairs done at reasonable prices.

Gradually small factories spring up to supply the local demand but they are as a rule limited in their output and their further development depends on the cheapness of power or fuel.

North Dakota has been widely advertised as a bonanza wheat state and as such, it is known all over this country and Europe. No one thinks of this state except as a purely agricultural country having a wonderfully rich soil.

As a matter of fact North Dakota possesses advantages for industrial enterprises second to none and superior to most states in the union. This fact is far from being realized by its own citizens.

The Commissioner of Agriculture and Labor, has been advertising extensively the vast natural resources of the state

thru the east, by giving exhibits at state fairs. While his work has been of inestimable value, nevertheless most manufacturers are so narrow-minded that they refuse to believe the truth and there are many who profess to believe that this state is nothing but a wilderness. It is strange how such beliefs come about, but they exist.

Only recently a party of men residing in New York formed a plan to come to this state and convert the Indians to Christianity, because as they said, "It would be the means of civilizing the state and redeeming the people from a condition of savagery."

Such ignorance seems inexcusable, but it can only be overcome by persistent education thru advertising. Every man, woman and child in the state when they write to friends living in the east should tell of the great possibilities that exist here.

The thing of greatest importance to manufacturing is cheap fuel, without it no state or locality can hope to successfully enter the industrial field.

Of fuel, North Dakota contains under its surface nearly one-sixth of the available supply of the United States, and by virtue of it, will, in another generation, become a large manufacturing center.

NOT THE TOPIC WITH FARMERS

Congressman Phil Campbell of Kansas, who was in Washington the other day, does not believe that the farmers of the country are as interested in the downward revision of the tariff as does Senator Cummins of Iowa, and other Republican "insurgents."

"The important subjects regarding the welfare of the country, which used to be thrashed over and settled at the corner store, are regarded as disposed of, and the farmers are attending to business," said Mr. Campbell. "They have no time for politics. If you see a farmer standing at the corner talking to another one, and you are anxious to know who they are, you will find that one of them is a retired farmer, now one of the directors of the bank, explaining to the other fellow all about a loan of \$5000 which he can get just as cheap at his bank as anywhere else.

"The farmers are getting better prices for their produce than ever, and as long as this is the case, there is no use in talking to them about a reduction of the tariff. They are using automobiles now where they used to employ horses and wagons a few years ago. They don't feel the necessity for a change in the political program of the country."

LIMOEN LIGHT AND HEAVY SOILS

Sandy soils do not require as large amounts of lime as are needed for the

profitable utilization of heavy lands—possibly only one-third or one-quarter as much—according to Professor Voorhees of the New Jersey Experiment Station. In heavy soils comparatively large quantities of lime are needed for the maintenance of satisfactory moisture and aeration conditions. It is one of the functions of lime in such soils to cause the fine particles to flocculate, to increase the size of the air spaces and to make possible a more rapid circulation of air and moisture. Thorough liming of heavy soils facilitates the escape of excessive moisture, and permits them to warm up at an earlier date. Various chemical and bacteriological activities are encouraged and the productive power appreciably increased. Lime undoubtedly encourages the activities of various kinds of soil bacteria. It encourages the processes of decay and nitrification. It hastens the disappearance of the humus, but provides also for a more abundant supply of available nitrogen to crops.

FERTILIZER IMPORTATIONS

Imports of all kinds of fertilizers and fertilizer materials amounted to about \$27,000,000 in 1908. Imports of Chilean nitrate of soda increased from \$8,800,000 in 1904 to \$12,000,000 in 1908.

INDIANA WINS CORN PRIZES AT CORN SHOW

Fred C. Palin of Newton, Ind. has won the prize for the best ear of corn in the world at the National Corn Exposition being held in Omaha; J. R. Overstreet of Franklin has won the grand champion sweepstakes for the best ten ears and another Indiana man, C. L. Kerlin of Franklin won the first prize for the best bushel of seventy ears in the world.

The exposition opened in Omaha, Monday, December 6 and continues until December 18. The judging was all done before the gates opened and the three Indiana men had the honors.

Mr. Palin wins the famous Kellogg trophy, worth \$1,000; J. R. Overstreet gets the \$1,000 silver trophy offered by the Indiana Corn Growers' Association, while Mr. Kerlin wins prizes worth \$500.

This is the third year in succession which Indiana has won the grand champion sweepstakes at the National Corn Expositions.

"I have worked seven years to grow the best ear of corn in the world," said Mr. Palin. "Its parent stock consisted

of Reed's Yellow Dent and Alexander Gold Standard. We planted two rows of one and then two rows of the other, cutting off the tassels of the Gold Standard corn the first two years. This gave us the seed from which the best ear of corn in the world was grown."

Judges who passed on the single ear said: "It is the best ear the world has ever produced. Indiana is to be congratulated as the ear is far superior to the famous Pascal ear. It is the most perfect ear we have ever seen, its kernels $\frac{3}{4}$ of an inch deep and very little room is left for cob."

Big Delegation Brought by Wheelock & Wheelock of Fargo

One of the large visiting delegations to the show is the special party of North Dakota farmers which come as the guests of Wheelock & Wheelock of Fargo.

The object of the visit is to afford an opportunity for these farmers to see the wonders of the National Corn exposition and especially the grains and grasses which are adapted to that section of the country. The firm acting as host wanted to give these farmers an opportunity to gain valuable information so they may know more of the methods employed in raising corn, which is fast gaining a foothold in North Dakota.

These farmers have all made a success in growing wheat, oats, barley, rye, alfalfa, potatoes and other grains and they want to learn of corn. Most of them are well-to-do from having used practical farming methods. They will remain until Friday evening. The members of the party are:

Mr. and Mrs. George Gavin, Wheatland; John Durkin, Embden; Emil Hadland, Andrew Hadland, Fargo; H. A. Button, Casselton; Alonzo Odell, Tower City; G. M. Babcock, Belfield; J. T. Flack, Page; Robert Wadson, William Mahlke, Alice; Rev. T. O. Skaar, C. E. Nugent, of Magill & Co., seed merchants, Fargo; C. A. Wheelock, treasurer Wheelock & Wheelock, Fargo; M. G. Boecher, in charge of advertising, Wheelock & Wheelock, Fargo; F. C. Stoltzman, solicitor Wheelock & Wheelock, Madison, S. D.; Andrew Nordloef, solicitor, Wheelock & Wheelock, Carthage, S. D.

Carl F. Rakow, of Wheatland who was a delegate to the National Convention of the Society of Equity held in Indianapolis November 18, made a most interesting address to the convention on the necessity of protection for the wheat grower. He exposed fully the evils of the drawback provisions of the tariff law

as they relate to wheat, his remarks were well received by the convention.

Mr. Rakow adduced figures to show that there was not the least necessity for the Northwestern millers to grind Canadian wheat. In the crop year of 1907 the three spring wheat states raised 155,210,000 bushels of wheat, the 449 flour mills in the three states ground into flour only 120,057,995 bushels, thus leaving a surplus of wheat for export after making allowance for seed purposes.

On his return home, Mr. Rakow stopped over a day in Minneapolis and had a most interesting discussion with the president and secretary of one of the largest milling companies in the country. He presented the farmers' side of the question of the treatment of the wheat shippers to the Minnesota terminals. The cost of production was so ably handled by him that the miller was forced to admit that the farmer is entitled to figure his costs just the same as any manufacturer, that he was entitled to a fair profit over and above the cost of production.

This proposition is certainly fair, the farmer should reap a fair profit over and above costs, as well as the city man, and when he can do this he will live in as fine a house with all of the modern improvements as the city man, have the grounds in front of his home kept in good order, and will have the good roads so much desired by everybody.

All these things will come to pass said

Sunny Southern Alberta 320 acres
2 1/2 miles
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H. GRAHAM, Grandview, Iowa.

Michigan Lands

SEND for my free 32-page illustrated booklet and map of Dempsey Lands in Mason and Lake Counties, Michigan; unexcelled for general farming and sheep and cattle raising. Best and at lowest prices in Michigan. Easy terms.

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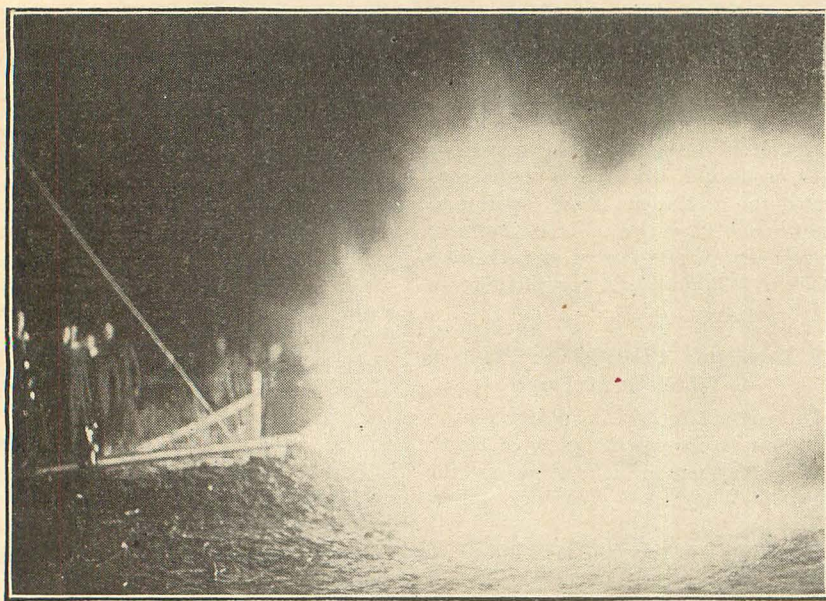
Lake Superior Herring of the very best kinds can be had at the following low prices:

In 100 lb. lots \$3.50 per 100 lbs.; in 500 lb. lots \$3.25 per 100 lbs.; in 1000 lb. lots \$3.00 per 100 lbs. Pickerel \$6.00 per 100 lbs.

SEVERTSON BROS., 1921 West 2d St.
DULUTH, Minn.

FOR SALE Choicest Extracted Clover and Basswood Honey. Cases of two, 60lb. cans \$12.00. Foxhounds, very Heavily Furred Buffalo Robe and Stradivarius Violin. **ELIAS FOX,** Hillsboro, Wis

A DISPLAY OF NATURAL GAS BURNING AT WESTHOPE



The city is heated and lighted with this greatest of Nature's fuel, and it is proving satisfactory both from the standpoint of cheapness, comfort and cleanliness.

Mr. Rakow when the farmer takes charge of his own business and runs it for profit, just the same as any business man in any other line.

The Equity Society has an exchange of its own in Minneapolis and the members are supposed to ship their grain there, as the exchange pays into the Department of Grain Growers of the Society \$4.50 for each car it handles. If enough cars were shipped by the members, it would give the society plenty of money with which to carry on its work.

Of all the grain shipped to the exchange by the members of the society, Mr. Rakow's exceeded those of any two other members. He is thoroly earnest in his work, and today he stands head and shoulders above any of the leaders of the society in this state, not only in the amount of work done, but also in the results accomplished.

NORTH DAKOTA PRIZE WINNERS

Winners of prizes in North Dakota for best corn, wheat, oats and barley, at the National Corn Exposition, Omaha, December 6 to 18, 1909.

For ten best ears dent corn, any color, North Dakota only

George Patterson, Sheldon, first, \$25; F. E. Kurtz, Hazelton, second, \$5.50; M. R. Fritz, Lidgerwood, third, \$5.

Best ten ears flint corn any variety, North Dakota only

Donald McLarty, Niche, first, \$15; P. S. Petterson, Menkinock, second, \$5.50.

Best single ear dent corn, any color, North Dakota only

R. J. Hughes, Wahpeton, first, \$5; Elmer Nelson, Hatton, second, \$4; Ben Taylor, Wahpeton, third, \$3.

Best peck fife wheat, North Dakota, only

H. Gailfus, Picton, first, \$10; H. Gailfus, Picton, second, \$5; J. W. Mollins, Hillsboro, third, \$4.

Best peck blue stem wheat, North Dakota, only

H. A. Nelson, Ray, first, \$10, E. F. Jurgensen, Bisbee, second, \$5; C. F. Nelson, Bisbee, third, \$4.

Best peck wheat other than fife or blue stem, North Dakota only

C. F. Nelson, Bisbee, first, \$10; W. S. Wibe, Bisbee, second, \$5; Charles Paulson, Bisbee, third, \$4.

Best peck durum wheat, North Dakota only

F. S. Woodwiss, Norwick, first, \$10; E. F. Jurgensen, Bisbee, second, \$5; Nelson Shipman, Bisbee, third, \$4.

Best peck white oats, North Dakota only

P. E. Gaarder, Kramer, first, \$10; F. W. Bennett, Bowman, second, \$5; J. M. Mollins, Hillsboro, third, \$4.

Best peck oats other than white, North Dakota only

F. W. Bennett, Bowman, first, \$10; Sather Bros., Sather, second, \$5; Alex McDonald, Bismarck, third, \$4.

Best peck six row barley, North Dakota only

F. Mohle, Buford, first, \$10, C. A. Stubbins, Granville, second, \$5.; Antone Nelson, Bisbee, third, \$4.

Best collective display of grains and grass seeds, North Dakota only

C. F. Nelson, Bisbee, first, \$100; E. F. Jurgensen, Bisbee, second, \$50; R. J. Hughes, Wahpeton, third, \$35.

TRI-STATE MEET AT FARGO, JAN. 18-21

The Grain Growers' Convention will hold its twelfth annual session at Fargo, N. D., Jan. 18-21 inclusive.

The sessions of this great meet have been growing in importance and breadth of interest from year to year, until now it is one of the greatest agricultural meetings held in the entire country.

This year the management has secured some notable speakers, among them being Prof. Andrew Boss of Minnesota, W. J. Spillman, of the Bureau of Plant Industry at Washington, H. L. Bolley, of North Dakota A. C.; O. C. Gregg; George McKerrrow, Supt. of Wis. Farmers' Institutes; U. S. Senator McCumber; N. J. Bachelder, Editor of the National Grange; M. F. Greeley, Editor of Dakota Farmer; W. C. Gilbreath of North Dakota; and James J. Hill, who will deliver the afternoon address on the closing day.

As it is not known at this writing whether or not the railroads will allow special rates, this matter should be inquired into by those coming to the Convention. There will be ample provision made for the visitors at the Convention by the hotels of the city, and if you can by any possibility be present, this is a special and personal invitation to you to be in Fargo from the morning of the 18th to the close of the Convention.

VENTILATING BARN

I want to ventilate my barn. Should the ventilator start a foot from the bottom of the floor, or should it start from the ceiling above?

Underwood, N. D. R. E. B.

Answered by Prof. Sheppard

There is something of a controversy between men who have made a special study of the ventilation of barns as to whether the ventilating shafts should have their in-takes near the floor or at the ceiling.

Those who advocate having the openings near the ceiling argue that the impure air rises to that part of the enclosure and should be removed by openings at that point. They arrange to have the fresh air in-take openings near the floor and hold that the ventilating shafts remove the foul air from near the ceiling and the intake shafts let in fresh air at the floor causing a circulation which makes the best possible change or shift in it.

Those who advocate the opening of the ventilator shaft near the floor and of the air in-take near the ceiling argue

The American Woman's League

THE MOST BENEFICIAL CO-OPERATIVE
MOVEMENT THE WORLD HAS EVER KNOWN

IT WOULD be impossible to tell the readers of The North Dakota Farmer in this short space the wonderful story of THE AMERICAN WOMAN'S LEAGUE—how it was conceived and founded; how its rapid growth has spread from coast to coast and now numbers tens of thousands of enthusiastic members in all walks of life; of its great plans and purposes; of the work it is doing now; of the immense practical services it renders its members, through the working out, in a strictly businesslike manner, of its central idea—**co-operation**.

But the full story is told in a booklet "The American Woman's League, its Plan and Purpose," and you have but to fill out and mail the Coupon below, or write a postal card, to get this booklet promptly, by return mail.

Every Woman, whether Mother, Wife or Daughter; every Man, whether Father or Son, is **vitaly interested** in the construction of the magnificent gateway to greater opportunity for intellectual, social and industrial advancement which the AMERICAN WOMAN'S LEAGUE is erecting in its daily gathering of strength.

The League is a National Association of Women (with men as honorary members) banded together for mutual benefit, protection, education and advancement. It is not a "secret society"; it is not an insurance organization, nor is it a charity. It is founded and operated on safe, conservative, economically sound, **business principles**. Its membership is spread throughout the entire United States.

In every community, town or city where there are sufficient members (from twenty-five on up) beautiful local Club Houses are erected by the LEAGUE for the sole use of its members, **free of expense**, and provided with a fund for the maintenance of these Club Houses.

The requirements for membership are simple, and easy of fulfillment—may be met by any intelligent person in a few days, or a week's time (although a full year is allowed), and once performed, entitles the member to **all** the benefits and advantages of the entire organization **FOR LIFE** as a right of membership. **There are no dues, there is none of the member's money required**—simply a pleasant service, easy and dignified of performance. You will realize this when you get the booklet!

LEADING INSTITUTIONS OF THE LEAGUE

The Full and Free Use of Which is the Right for Life of All Women Members

The Peoples University: With courses of instruction in every branch of learning—trades, arts and professions—from the most elementary to the highest that can be successfully taught by mail. Correspondence students in many of the branches, reaching a high degree of proficiency, are awarded *Scholarships for personal attendance in the University, and given a salary sufficient to maintain them for a year, as a finishing course.*

The Building-Loan and Relief Fund from which members may borrow money at a low rate of interest for home-building, and for assistance in times of need or distress.

The National Woman's Exchange, amplifying to National scope the best work of Women's Exchanges, affording a channel for the sale, at profitable prices, of articles made by members. In connection with the courses of the University, it solves for many women the very problem of existence. It acts as purchasing agent for the LEAGUE'S membership, if they wish, supplying their needs and wants in every line, through co-operative principles of buying, at lower prices than as individuals they could hope to secure.

The Circulating Libraries of Phonograph Records and Books, bringing into the homes of members,

wherever the mails reach, the best of the world's music and entertainment, reading and instruction possible to secure.

The Legal Department, furnishing free advice to members on legal matters of a personal character.

The Retreat, proposed to be erected in University City, Missouri, the Capital City of the LEAGUE, for the care, in comfort and happiness, of members who may become destitute. And an Orphanage for the care and education of minor children of deceased members who may be left alone in the world without friends or means.

Any woman of the white race is eligible for membership, and, as a member, is entitled to the advantages and use of **all** the institutions of the LEAGUE for life. A man may become an honorary member, entitled to the free use of the various institutions, barring the Retreat and Orphanage and Loan and Relief Fund.

Send to-day for the booklet fully explaining how all these **leading** features of the LEAGUE Plan, and many others of lesser importance, are carried out completely without the members having to pay any initiation fees, dues or assessments either at the beginning or at any other time.

The Founder's Chapter of the LEAGUE, **entitling the first one hundred thousand members to special advantages**, is fast filling up—delay may prevent the possibility of YOU becoming a becoming a member of the Founder's Chapter. Don't say "It can't be done" until you have given us the opportunity to prove to you that **it is being done**. Address all communications

The American Woman's League

7049 Delmar Boulevard, University City, St. Louis, Mo.

TO THE AMERICAN WOMAN'S LEAGUE
7049 Delmar Boulevard, University City, St. Louis, Mo.
Please send me, without obligation on my part,
the booklet "The American Woman's
League, Its Plan and Purpose."
Name _____
P.O. and St. _____
State _____

that the foul odors of the stable emitting from the floor should be taken off directly by the ventilating shaft, while the cool fresh air coming in near the ceiling tends by reason of its weight to drop to the floor and in doing so to stir the air of the entire stable completely.

My own experience with ventilating shafts makes me favor the plan of admitting the air near the ceiling and of taking it out a short distance above the

floor. By letting the air come in from the outside between the studdings at the floor and admitting it near the ceiling, it is warmed considerably while passing thru the wall and hence is admitted in a somewhat tempered condition.

If I adopted the reverse plan of admitting the fresh air near the floor, I would make it pass down the wall between the studdings and so warm it to prevent it chilling the stable too much.

WINTER WHEAT EXPERIMENTS ON THE DEMONSTRATION FARMS

Hugh J. Hughes, N. D. A. C.

Superintendent Porter of the Demonstration Farms of the state is alive to the fact that the question of whether or not we can successfully grow winter wheat in North Dakota is of present importance. This fall winter wheat fields were seeded on seven of the farms—Page, Bismarck, New Salem, Beach, Washburn, Flaxton, and Rugby. These places offer a variety of climatic and soil conditions that will give an average trial for the entire state.

The wheat was Turkey Red, the only variety that is recommended for Northwestern conditions, and was seeded in three ways, viz., in corn, on summer-fallow, and in barley stubble, save at New Salem, where it was seeded in the regular rotation on land that had produced a crop of oats and peas for hay. The first of October the wheat was three inches high, and had a healthy appearance. At Beach the wheat was doing well in the corn stubble and on the summer fallow, but there was a poor stand on the barley stubble. The wheat at Bismarck and Washburn on the corn stubble which is tall enough to hold the winter's snow. The Rugby summer fallow looks well. Owing to dry weather it is thin on the corn land, and for the same reason it did not grow on the barley ground. The same is true of Flaxton, at Page all three fields are looking well.

The wheat was broadcasted into the corn early in August and cultivated in. A one-horse drill would do better work. The summer fallow was well worked, and drilled in at the same time. The barley stubble came a little later, as soon as the crop was taken off. This wheat did not get an even start with the other two methods of seeding.

These experiments should show whether or not, and under what conditions, winter wheat will grow in North Dakota. The Extension Department of the A. C. is anxious to gather all further information available along these lines, and would like to hear from farmers who have tried winter wheat growing, giving all the details of its handling whether a success was made of it or not. Such letters should be addressed to Hugh J. Hughes, Extension Department, Agricultural College, North Dakota.

CROP REPORT

The final estimates of the Crop Reporting Board of the Bureau of Statistics, United States Department of Agriculture, based on the reports of the correspondents and agents of the Bureau, indicate the harvested acreage, production, and value of important farm crops of the United States, in 1909 and 1908, to have been as follows:

Crop	Acreage	Production	Farm Value, Dec. 1	
			Per bu.	Total
	Acres	Bushels **	Cents	Dollars
Corn, 1909	108,771,000	2,772,376,000	59.6	1,652,822,000
Corn, 1908	101,788,000	2,668,651,000	60.6	1,616,145,000
Winter Wheat, 1909	28,330,000	446,366,000	102.9	459,154,000
Winter Wheat, 1908	30,349,000	437,908,000	93.7	410,330,000
Spring Wheat, 1909	18,393,000	290,823,000	93.1	270,892,000
Spring Wheat, 1908	17,208,000	226,694,000	91.1	206,496,000
All Wheat, 1909	46,723,000	737,189,000	99.0	730,046,000
All Wheat, 1908	47,557,000	664,602,000	92.8	616,826,000
Oats, 1909	33,204,000	1,007,35,3000	40.5	408,174,000
Oats, 1908	32,344,000	807,156,000	47.2	381,171,000
Barley, 1909	7,011,000	170,284,000	55.2	93,977,000
Barley, 1908	6,646,000	166,756,000	55.4	92,442,000
Rye, 1909	2,006,000	32,239,000	73.9	23,809,000
Rye, 1908	1,948,000	31,851,000	73.6	23,455,000
Buckwheat, 1909	834,000	17,438,000	69.9	12,188,000
Buckwheat, 1908	803,000	15,874,000	75.6	12,004,000
Flaxseed, 1909	2,742,000	25,856,000	152.6	39,466,000
Flaxseed, 1908	2,679,000	25,805,000	118.4	30,577,000
Rice, 1909	720,225	24,368,000	79.4	19,341,000
Rice, 1908	655,000	21,890,000	81.2	17,771,000
Potatoes, 1909	3,525,000	376,537,000	54.9	206,545,000
Potatoes, 1908	3,257,000	278,985,000	70.6	197,039,000
Hay, 1909	45,744,000	* 64,938,000	\$10.62°	689,345,000
Hay, 1908	46,486,000	* 70,798,000	\$ 8.98°	635,423,000
Tobacco, 1909	1,180,000	† 949,357,000	†† 10.0	95,719,000
Tobacco, 1908	875,000	† 718,061,000	†† 10.3	74,130,

**Bushels of Weight; *Tons; °Per Ton; †Pounds; ††Per Pound.

Details by states will be published in the Supplement to the December "Crop Reporter."

The average weight per measured bushel is shown by reports received by the Bureau to be 57.0 pounds for Spring Wheat, 58.4 pounds for Winter Wheat, and 32.7 pounds for Oats, against 57.3, 58.8, and 29.8 pounds, respectively, last year. The quality of Corn is 84.2 per cent against 86.9 last year.

Victor H. Olmsted,
Chief of Bureau, Chairman.

Approved:

Willis L. Moore, Acting Secretary.

Nat C. Murray,
John J. Darg,
J. P. Killebrew,
Crop Reporting Board.

DON'T BUY GASOLINE ENGINES

alcohol engine, superior to any one-cylinder engine; revolutionizing power. Its weight and bulk are half that of single cylinder engines, with greater durability. Costs less to buy—less to run. Quickly, easily started. Vibration practically overcome. Cheaply mounted on any wagon. It is a combination portable, stationary or traction engine. SEND FOR CATALOGUE. THE TEMPLE ENGINE MFG. CO., 151 West 15th St., Chicago. THIS IS OUR FIFTY-SIXTH YEAR.

UNTIL YOU INVESTIGATE
"THE MASTER WORKMAN,"
a two-cylinder gasoline, kerosene or

FERTILIZATION OF CLOVER

At the North Dakota Experiment Station, the agency of bumblebees in the fertilization of clover was studied with and without the bees and with a miscellaneous lot of insects collected in a clover field. The insects were in a cage for 48 hours. The heads in the cage without insects were pollinated by rolling between the palms. From these tests the following results were obtained:

	Control	Hand-rubbed	Field	Misc. Insects	Bumble Bees
No. heads studied	14	3	10	70	60
No. flowers per head	103.5	111.0	134.0	93.5	92.5
No. seed producing flowers per head	5.9	2.6	83.6	2.2	43.5
No. of flowers per head producing pump seed	5.7	.24	62.4	2.3	47.0

From these results it has been concluded that bumblebees are responsible for about 95% of the clover seed produced and that a small amount of clover seed is formed by natural self-pollination.

INSTITUTE SCHEDULE FOR JANUARY AND PART OF FEBRUARY -

Finley, Monday, Jan. 3rd; Aneta, Tuesday, Jan. 4th; Tolna, Wednesday, Jan. 5th; Cando, Friday, Jan. 7th; Churchs Ferry, Saturday, Jan. 8th; Lankin, Monday and Tuesday, Jan. 10th and 11th; Grafton, Wednesday and Thursday, Jan. 12th and 13th; Joliette, Friday, Jan. 14th; Drayton, Saturday, Jan. 15th; Kindred, Monday, Jan. 17th; also Reynolds, Monday, Jan. 17th; Fargo, Tuesday to Friday, Jan. 18th, 19th, 20th and 21st; Abercrombie, Saturday, Jan. 22nd; Walcott, Monday, Jan. 24th; Wahpeton, Tuesday, Jan. 25th; Milnor, Wednesday, Jan. 26th; Gwinner, Thursday, Jan. 27th; Monango, Friday, Jan. 28th; Edgeley, Saturday, Jan. 29th; Casselton, Jan. 31st; Hatton, Tuesday, Feb. 1st; Northwood, Wednesday, Feb. 2nd; Michigan, Friday, Feb. 4th; Hillsboro, Saturday, Feb. 5th; Neche, Monday and Tuesday, Feb. 7th and 8th; Hamilton, Wednesday, Feb. 9th; Hoople, Thursday, Feb. 10th; Cavalier, Friday and Saturday, Feb. 11th and 12th.

ADULTERATED FOOD IN CANADA

The people of Canada have a grievance against the United States. But the remedy would appear to lie in their own land. It is asserted in a bulletin issued by the inland revenue department of the Dominion that adulterated food manufacturers are making the country a dumping ground for foods driven out of the United States by the pure food law. In addition to the national enactment many states have legislated against adulterated food products? Every step taken here in this direction aggravates the situation across the border, for the manufacturer sets at once to work to sell his prohibited prod-

ucts there. Out of 145 samples of ground cloves collected in various localities only seventy-four were genuine. Chicory and roasted grain are frequently found in coffee. Native wines are sold as foreign brands. The Canadians surely are entitled to sympathy, and there may be gratification in this country at such evidence of the efficacy of its pure food legislation.

AMERICAN PIG AHEAD

"A lecturer to the Royal Geographical Society, of England, has been telling of a Corsican pig which got into the wrong field," said W. G. Tillotson, of Manchester, England, who recently visited Washington, "and caused a family vendetta in which hundreds of lives were sacrificed.

"The most expensive pig on record, however," continued the Englishman, "was not Corsican, but American. It was caught in a fence on a Rhode Island farm on an election day in 1811. Its owner took so long in setting it free that he reached the polling place too late to vote. The lack of his vote meant the election to the state legislature, by a majority of one, of a representative who was in favor of war with England. That legislature elected, also by a majority of one, an advocate of the war policy to represent Rhode Island in the Federal Senate. And it was by a majority of one that Congress declared war in 1812. Even then England got the worst of the deal, but we have eaten up a good many American hogs since to get even."

CULTIVATION KILLS WEEDS

Observations of the growth of Johnsongrass have shown that rootstocks remaining in the soil at the end of the season send growth to the surface the next season, but do not themselves branch and send out other underground

branches. When the new growth arrives at the surface, a new rootstock forms a crown, develops a new set of fibrous roots, and sends new rootstocks off into the ground.

It was also discovered that if the grass is cut back close to the ground, and not allowed to blossom during the season, the rootstocks remain slender and very near the surface of the ground, so that practically all of the underground growth can be turned up by a very shallow plowing. This method of treatment applied to quack grass and Bermuda grass will have similar results. The evidence secured is taken as showing that these rootstock grasses when weakened by constant pasturing or mowing on land remaining unbroken for several years can be killed out by a minimum of cultivation.

RECKLESS AUTOMOBILING

Virginia and some other states have laws which compel automobile drivers to stop their machines in case the driver of a horse holds up his hands. The judgment as to whether the horse is "skeery" is left to the driver, not the automobilist. Only recently a case is reported where a mule driven by a colored preacher became frightened at an automobile and when the owner of the auto refused to stop, the preacher climbed out of his wagon and a general fight ensued in which shots were exchanged. The friends of the autoist caught the preacher and lynched him.

A judge in Sacramento, California, has indicated one way of treating ignorant and brutal chauffeurs who have no regard for the lives of pedestrians. Such a person ran over and killed the father of five children. The judge imposed a sentence of ten years in the penitentiary but placed the convict on probation, requiring him, as the price of conditional freedom, to pay \$25 a month toward the support of the children made fatherless by his reckless driving. This seems a wholesome parole and a logical penalty. It places a new brand upon the untamed and careless driver of road machines. If such persons are compelled to support the family of their victims, they may be more willing to go to a training school before undertaking an occupation that should not be one of danger to others.

MOVING PICTURES AN ADJUNCT TO AGRICULTURE

Recently John Collier, general secretary of the national board of moving-picture censors, announced that moving pictures will be applied to the teaching

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of botany, metallurgy, biology, and the science of agriculture and surgery.

Films have been made for use in the Wisconsin Agricultural College showing in parallel pictures the difference between scientific and unprogressive farming in process and results, said Mr. Collier. This graphic presentation of the properly prepared field giving an abundant yield side by side with the unimproved one with a scanty crop is proving a most effective means of instruction for the Wisconsin farmers.

The same methods will be used for various branches of farming and dairying in which reform is being urged. An interesting possibility, Mr. Collier continued to say, is the use of this demonstration out in India to make known the improved methods of farming in the famine districts. It is asserted that systematized agriculture would do a great deal toward preventing the Indian famines.

WHY FARM LIFE IS BEST

Florence McKay, Ayr, N. D., Age 13 yrs.
In December Rotary

A great improvement has taken place in farming during the last fifty years. The old method of raising wheat year after year is no longer in use but di-

versified farming has taken its place; thus the farmer is able to raise better crops than formerly. New methods of farming are being taken up by the new generation, which prove successful. A young man may be proud of owning a farm in North Dakota and of being able to care for it in a scientific manner. The farm implements are very different from those of long ago. Now a farmer has everything pertaining to machinery that he needs to do his work readily and easily.

The farmer is able to enjoy the comforts of most city people of moderate means. He perhaps owns an automobile and can take trips thru various parts of the county. In remote country places the rural free delivery has been introduced, and thus the farmer is able to read the daily papers and keep in

touch with affairs of the world. The farmer takes an active part in the government of the nation. Many hold office at the present time, which, years ago, was something unknown. At his home you will find some of the late magazines and many books by standard authors well known to everybody, therefore he and his family are able to read what will prove instructive and interesting to them.

Farm life has many advantages when compared with that of the city.

In the city the buildings are very close together and they are very high, which shuts out the fresh air and sunlight. This is very hard on the dweller of such a place. The man in the city often pays a visit to the farm. This he calls a rest. Many city people become introduced to that terrible disease "tuberculosis."

The Wagon Of Steel

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Roller Bearing

Makes draft 30 to 50% lighter.

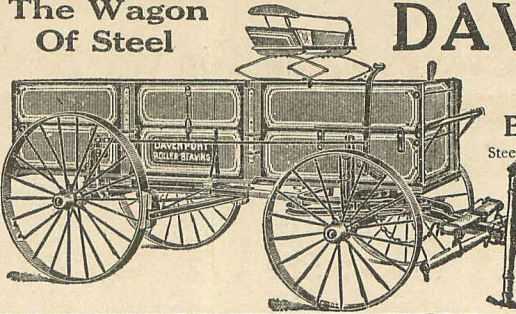
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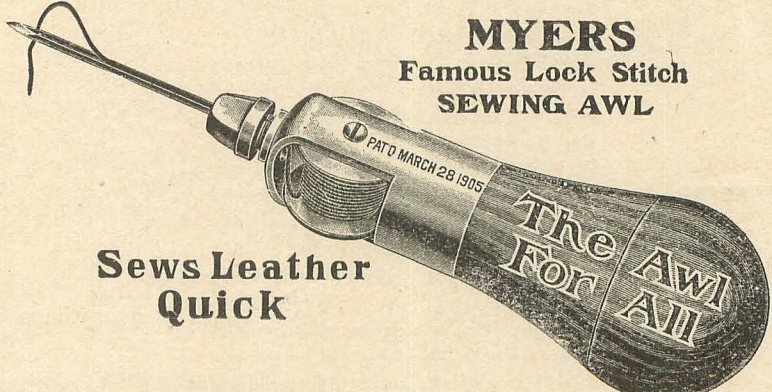
A Premium Worth Having

This awl is one of the handiest tools about the farm. Would you like one without cost? The Regular Price is \$1.00.

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Famous Lock Stitch
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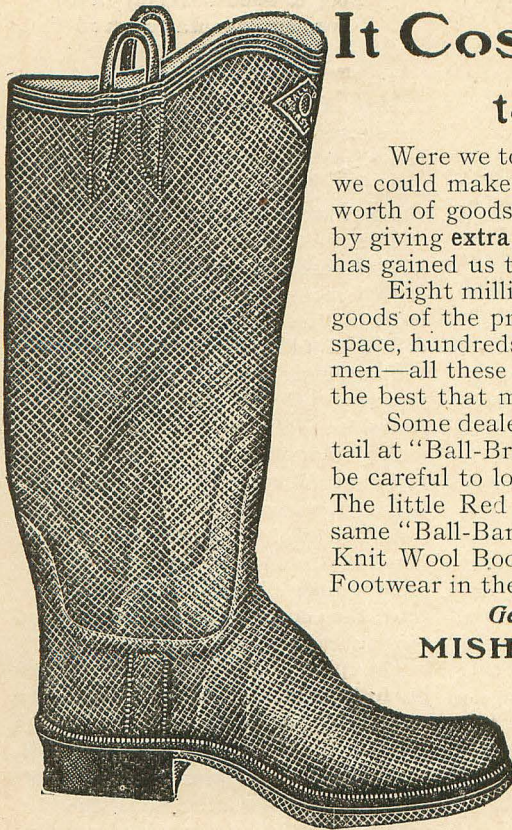
There are four ways by which you may own one of these awls: First, Send your renewal and one new subscription with \$1.00. Second, Send two new subscriptions and \$1.00. Third, Send renewal for two years and \$1.00. Fourth, Send \$1.00 and we will renew your subscription and send the North Dakota Farmer for six months to any three persons in this state. The awl will be sent post paid.

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NORTH DAKOTA FARMER, Lisbon, N. D.

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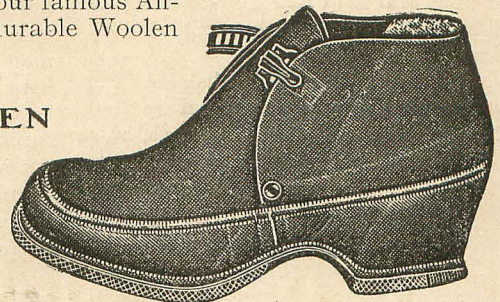
Were we to sacrifice **quality** in "Ball-Band" Rubber Footwear for **just one year**, we could make hundreds of thousands of dollars extra profit on the \$10,000,000.00 worth of goods we sell. But, **we will not do it!** We divide our profits with **you** by giving **extra quality**, and are willing to do so to maintain the high standard which has gained us the leadership in our line.

Eight million consumers can testify to the truth of our claim that we make our goods of the proper crude materials, and know how to do it. Forty acres of floor space, hundreds of machines, vast quantities of materials, an army of highly trained men—all these are the factors that aid us in making "Ball-Band" Rubber Footwear the best that money can buy.

Some dealers also handle other brands, which cost them **less**, but which they retail at "Ball-Brand" prices. As their profits are greater on these brands, you should be careful to look for the "Ball-Brand" trade-mark, which we place on every pair. The little Red Ball is there for **your protection**. This same "Ball-Band" Trade-Mark identifies our famous All-Knit Wool Boots and Socks—the most durable Woolen Footwear in the world.

Get Them of Your Dealer
**MISHAWAKA WOOLEN
MFG. CO.,
Mishawaka, Ind.**

"The House that Pays Millions
for Quality"



They then go out into the country to inhale the fresh air and sometimes, if the case has not gone too far, the person will recover. The man of the country is ever in good humor because he is in a healthy condition, while a man in the city is worn out and tired on account of irregular eating and sleeping.

On an average many more people die in the large cities and more rapidly than in the country. The sickening odors, the impure air and the lack of sunlight are very bad; while on the farm we may have all the sunlight, pure air and strengthening food that is required to keep us in a healthy condition.

Fifty years ago today a farmer would not think of sending his boy and girl away to a high school and sometimes he would not allow them to finish the common country school, while today the farmer's child has an opportunity of securing as thoro an education as the boy or girl of the city.

Normals, the Agricultural College and high schools have been erected during the past half century in North Dakota for the benefit of the younger generation of this state.

The farmer is the most independent man on earth, if in comfortable circumstances. There is no one to interfere with his time of leisure or pleasure. His life is free from the worry and care of the city man.

The farm today is greatly improved and the future generations will find it still more improved and no longer a place to be disliked by anyone.

AN ILLUSTRATED LECTURE ON THE AUTO-MOBILE ON THE FARM

Recently, at the Automobile School opening exercises in New York City, J. George Frederick, managing editor of Printers' Ink, delivered a most interesting lecture on the modern use of automobiles on the farm, illustrated by many stereopticon pictures.

Mr. Frederick first traced the reasons for the greater wealth of the farmer thru scientific farming and the use of good machinery, and showed the natural connection between the use of machinery and the auto by farmers. He told how by authoritative estimate there were now 76,000 autos in use on farms—

about one-fourth of all in use—and how one dealer in an Oregon town of 5000 population, sold 42 in one season. He said that of the 4516 autos registered at a recent date in Kansas, half of them were owned by farmers; and that out of 10,000 autos owned in Iowa one-half were owned by farmers.

Taking up the question of how the farmer finds the auto profitable, Mr. Frederick told of the great help autos are to the dairy farmers in delivering milk quickly and without disturbing the value of the farm horses during the busy farming seasons. He also pointed out how the delivery of milk by auto to railway stations has greatly widened the area of farm land in which it is profitable to engage in the milk business.

Mr. Frederick showed typical photos of farmers unloading milk from autos, and carrying poultry and vegetables to market, hoisting hay on stacks in the field with an auto, fixing up wire fences with an auto repair wagon, carrying grain to elevators, hitching an auto to a broken down thresher power plant, etc.

As the auto has four or five times the capacity of a horse, without his care,

it was shown how, merely for traction power the auto is an economic advance. Trucks with a five-ton grain capacity are now in use on the farm, and plowing with an Avery Gasoline Tractor was shown.

The recreation side of the auto on the farm was most effectively illustrated by Mr. Frederick's pictures, some showing the women of the family out for a spin

to the fields in their house dresses, for a mid-day change from household routine, others showing the farmer and his sons using the auto in late autumn to go on a hunting trip (with a deer slung across the radiator) and still others showing an astonishingly numerous holiday gathering of farmers in autos in small towns in the west which nobody has ever heard of before.

dent, William H. Gregg, Jr., Vice-President and E. H. Dyer, Secretary.

BUILT BIG BUSINESS

Where Staid Qualities, German Thrift and Industry Made Possible the Great Shoe Business of the F. Mayer Boot & Shoe Company, Milwaukee, Manufacturers of Mayer Quality Shoes

Most of us see only the present. We see success only as we are brought face to face with it today. How many of us ever look back for the cause, the vital things that make success possible?

That the key to real business success is often based on a sound principle, rather than money, is best illustrated by the reproduction of the following biographical sketch of Frederick Mayer, founder of the F. Mayer Boot & Shoe Company, reproduced from an issue of the German American National Alliance:

Frederick Mayer, founder of the factories at Milwaukee and Seattle now bearing his name, came to this country from Niernstein, Hessen Darmstadt, in May, 1851, and immediately proceeded to Milwaukee, Wisconsin, where he entered the employ of R. Suhm as a journeyman shoemaker.

The spirit that prompted him to seek his fortune in the new world was soon responsible for another change, and in 1852, a year later, he embarked in business on his own accord, making boots and shoes to order as only a German apprenticed artisan knows how. Subsequently a stock of goods was carried and a retail business conducted until 1880, when the manufacture of shoes was engaged in at wholesale to the trade.

The business succeeded from the beginning and it was here that the staid qualities of German honesty and persistency, together with the knowledge of shoe making gained by a strict German apprenticeship, came to the aid of a young business destined to become a factor in the production of shoes in America, for it soon became known that the shoes manufactured by F. Mayer had qualities not ordinarily found in shoes, and business began to expand.

In 1890 the business was well established, the foundation firmly laid and the policy well determined. From that time on the growth was more rapid. Factories, additions, more factories and more additions were added, until now the plant occupies a substantial group of buildings in Milwaukee and Seattle. The capacity of the present Mayer factories at Milwaukee and Seattle is 9,000 pair per day, giving employment to an army of people, paying annually over six hundred thousand dollars in wages, and employing sixty-five sales-

GRAND 5-YEAR OFFER, PAGE 13

AMONG OUR ADVERTISERS.

A PROGRESSIVE PAINT FIRM

**The Mound City Paint & Color Company,
St. Louis, Mo.**

Equipment Which Counts

There is probably no one paint and varnish firm north, south or west of Chicago that ranks higher in the estimation of the trade or is quite so well known as the Mound City Paint & Color Company of St. Louis, Mo. whose famous brands of **Red Horse Shoe** products are received with peculiar favor wherever introduced.

The progress of the firm has not been spectacular, but rather on natural and conservative lines, based, perhaps, on a determination or fixed purpose of meeting the requirements of a constantly expanding list of friends, irrespective of all other considerations whatever.

This necessarily implies up-to-date equipment, which also means a liberal expenditure of money and that too where returns on the investment may be, and frequently are, delayed.

Formerly a "chaser" a couple of "mixers" with a crude grinding mill or two and a few oil barrels, each containing its wooden paddle; were considered adequate equipment for a paint factory, and with the ultra-conservative, non-progressive and financially weak it is so today. It must not be assumed, however, that the changes which have evolved the modern paint and varnish works are the birth of a day, a month or a year. The evolution has been comparatively slow and the end is not yet, because it is impossible to write the word "Finis" while the spirit of enquiry and progress is still active.

It is generally conceded that anything which betters paint and varnish products—makes them more acceptable to the public—more definitely certain in the result and which at the same time minimizes cost to both manufacturer and consumer, is well worth the striving **for and we may also say is well worth the spending money for.**

What has been accomplished by the Mound City Paint & Color Company

along these lines is visible in the firm's admirably equipped paint factory, laboratories, varnish works and oil mill, but, perhaps, more clearly visible in the excellence of their products for which the demand is constantly enforcing increased facilities.

The general idea when referring to manufacturing equipment in relation to business is the mechanical, but this does not tell the complete story. There is another kind without which machinery would be of little or no worth—the flesh, blood, bone and sinew equipment, whose control of the mechanical part must be certain and absolute—whose honesty, ability and loyalty must ever be a definite factor in all calculations for success in business. We refer to this particular manufacturing equipment as "employees" and in this feature the Mound City Paint & Color Co. enjoys an enviable distinction.

Another feature of paint and varnish equipment is the staff of employees usually referred to as "business builders"—men whose interest in the success of "the House" is intensified by long connection—whose knowledge of the goods is derived by intimate acquaintance—whose intelligent presentation of facts and persistency commands attention, and in this feature also the Mound City Paint & Color Co. is exceptionally favored since the service of a majority of the equipment is almost coeval with the life of the firm.

There is yet another part of business equipment without which all other equipment would be useless and of waste. This is commonly spoken of as "executive brains"—the distinctly mental which involves far-sightedness, carefully thought-out plans, wise suggestion, direction and supervision. If success comes only thru the aid and exercise of these mentalities then it is fair to assume that the executives of the Mound City Paint & Color Co. have not been lacking in those qualities, since the firm, as it exists today, is a tangible monument of their talent and labors.

The officers of the Mound City Paint & Color Co. are Norris B. Gregg, Presi-

men who travel 24 states in the interest of Mayer shoes.

Frederick Mayer died on March 16, 1893, after building up a large and successful business. He was succeeded by his sons, George P. Mayer, Fred J. Mayer and Adam J. Mayer, who, by rigidly maintaining the policy of the founder, have succeeded in bringing the business up to its present magnitude, where it stands as a monument of German thrift and industry. Frederick Mayer was a man of strong character and amiable disposition. He believed in a square deal for everybody. He was popular and had hosts of friends, especially among the early settlers of Milwaukee, who admired him for the qualities that were responsible for his success. He was a man of simple tastes, who loved his home and believed in the strict observances of his duty to God and man. He left behind him a striking example of what has, in at least one instance, been contributed by a German to the welfare and prosperity of this great country.

The leading brands manufactured by the F. Mayer Boot & Shoe Co. are: "Honorbilt," for men; "Leading Lady" Shoes, "Martha Washington" Comfort Shoes, "Yerma" Cushion Soles, "Special Merit" School Shoes.

GASOLINE ENGINES

There isn't a national issue of greater interest to the farmer than the live subject of gasoline engines.

A booklet recently came into our hands called "16 Reasons". It is sent out by the Temple Engine Mfg. Company of Chicago. They state very plainly and to the point sixteen reasons why their "2 in 1" Master Workman gasoline engines are superior to other engines.

One particular point is that the Master Workman engine has absolutely **perfect lubrication** and therefore runs steady with full use of power, and lasts longer. Then again, the **mechanism is in full view**, which is a most important advantage and makes it especially adaptable for beginners. Another reason is,—its **full power** is available up to the **limit**; which is not the case in a single cylinder engine.

Especially strong is the reason that the Master Workman engine is the only gas engine that runs successfully with gas, gasoline, distillate kerosene or alcohol without change of mixers or other expensive changes.

Another reason is that it possesses up-to-date ignition, which reduces the cost of batteries and igniting troubles.

The Master Workman is fifty per cent more reliable than a single cylinder engine because there are double chances of having at all times a running engine, **and it can be used on light and heavy**

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For several years we have been searching for a magazine of national reputation with which we might combine, and in which we might have implicit faith as to its editorial policy and advertising patronage. The Farm Journal, of Philadelphia, Pa., is just such a publication. Its circulation is over 600,000; its class of advertising is beyond criticism. As a general farm paper, it has no superior in the nation. No farmer in North Dakota can afford to disregard our special offer of five years subscription to both the North Dakota Farmer and the Farm Journal, for only \$2.00. Subscribe yourself then pass the word along to your neighbor.

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North Dakota Farmer, Lisbon, N. D.

loads—using the single cylinder for the former and reserving both cylinders for the heavy work. This is an advantage of utmost importance that is obtained in no other engine than the Master Workman.

We have not seen any more convincing evidence of trust-worthiness in any engine than is given in these "Sixteen Reasons".

We suggest that this booklet is well worth the attention of every one contemplating buying a gasoline engine.

HOW TO REDUCE LIVING EXPENSES

Hundreds of New Ways to Prepare Food Economically

Statistics prove that the cost of living has steadily increased, and will continue to increase. At the same time the wage scale has not grown proportionately large enough to effect this. There is but one thing to do when confronted by a situation like this and that is to reduce the cost of living. Economy must be practiced to make ends meet. Many of the little luxuries that have been enjoyed of course can be stopped with slight inconvenience.

The real pinch comes when an attempt is made to tamper with the table. The proper amount of feed must be eaten. This is the largest household expense and the one turned to naturally when the question of economy is raised.

Now the easiest way to make a saving is to use the remains of the roast beef, the chicken or turkey, the shoulder of mutton, or many other things that heretofore were thrown away. It is just here that the woman who has an "Enter-

prise" Meat and Food Chopper in her kitchen is able to run her household economically. It makes possible hundreds of new ways to prepare food. Economizing by skimping the table is not necessary as the chopper reduces waste to a minimum.

The "Enterprise" Meat and Food Chopper **cuts**—not crushes—meat, fish, vegetables, fruit or any food that will go thru it. Many dishes that housewives have seldom made because of the trouble attached are easily prepared. New ones that they have hesitated to try are now within their reach. A turn or two of the handle and the article is out—and the advantage over the old time-consuming methods clearly shows it to be a household necessity.

"The Enterprising Housekeeper" is a valuable little book containing over two hundred recipes of which every housekeeper should have a copy. The publishers will gladly mail a copy to any address upon receipt of four cents to pay postage. Address The Enterprise Manufacturing Company of Pa., Dept. 47, Philadelphia.

FRESH FISH

No farmer can afford to be without fresh fish during the winter months, when they may be obtained at the exceedingly low prices offered by Severtson Bros., 1921 W. Second St., Duluth, Minn. Lake Superior Herring at 3½ cents per lb. and pickerel at 6 cents per lb., in 100 lb. lots, ought to replace the dried and salted fish we usually have to purchase during the winter months. We strongly advise our readers to give this firm a trial order.

North Dakota Farmer

AND SANITARY HOME

Entered as second class matter in the postoffice at
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Vol. 11 DECEMBER, 1909. No. 6

MIXED PAINTS AND THEIR COMPOSITION

The Eastern Paint Manufacturers' Association, at a meeting held in New York, had up the subject of paint legislation, and after considerable discussion the following resolution was unanimously adopted:

"Resolved, That, after a year's trial experience and expense in opposition to formula labeling legislation, we hereby re-affirm our position of a year ago to the effect that we believe that such legislation is pernicious and unjust to the trade generally, and be it

"Further, Resolved, That we will continue to oppose such legislation.

"Resolved, That, in order to secure a more uniform practice in the trade in reference to weights and measures, and also to guard against misrepresentation, this Association goes on record as favoring a Law, both State and National, requiring net weights and full measures and providing against misbranding and mislabeling."

In other words then the Eastern manufacturers do not care to have the public know of what their paint is composed. They admit themselves that short weight and measure has been a prevalent practice in the past and desire, since the abuses have become so great and to their inconvenience, that the State and National shall regulate this feature thru Law. They would also provide against misbranding and mislabeling; that is, they would not allow a man to call a paint "white lead" when in reality it was made of barytes, zinc, etc. They would, however, allow him to adopt a name for his paint, such as

"Standard White," put in all the inert material of any kind and character that he might choose, dope it with benzine, and load it down with water, as some of the Eastern manufacturers have been doing and are still doing, as will be shown by the analyses to be given in a forthcoming bulletin, and leave the public in ignorance of the facts.

The time has come when the people are demanding that they have truthful information with regard to what each paint is composed of, and they are willing to pay for what they receive. No honest manufacturer has anything to fear from putting a label on his paint and, unless the man is misled, where he opposes paint legislation requiring the percentage composition to be shown, you may rest assured that he has something somewhere to cover up, which he does not care to have the general public know about. To say that it is giving away secrets is not true, for there is not a large paint manufacturer in the country who does not already know the composition of his competitors paints. The consuming public are also fast becoming acquainted with the ingredients used in paints and are learning the difference between adulterants, cheapeners and paint ingredients.

PAINT MATTERS

A great deal has been said with regard to paint experiments and the value of the same. One thing is certain: those who have examined the paint fences and tests carried on at the Agricultural College, can easily detect where the so-called dope paints, furnished by catalog houses, were applied in the experiment. Inside of eighteen months these dope paints had practically gone to pieces, furnishing no protection for the wood beneath.

Those who purchase of this class of paint are sure to be disappointed, for they are throwing their money away. More than that, they are spoiling the surface of their buildings for no other paint can adhere to a surface of this kind. Even tho the surface of the old paint may look fairly strong at points, it soon gives way and carries the new paint with it. You then feel that the new paint is no better than the old one, when it was the fault of the old "dope" used in the first place.

Again, much of the ochre that has been used is as bad for a priming coat as the old "dope" paints, and one should use, for the priming coat, the paint which they are to put upon the building, properly thinned down, to act as a priming coat.

Many correspondents have asked with regard to peeling of paint on new buildings. In many instances the information furnished clearly indicates

that the difficulty was due to the fact that the wood was not sufficiently well dried out. If the wood contains moisture and paint is applied, there will be no penetration and after a little the water will force its way out beneath the paint and lift it off in blisters. Usually these blisters are filled with water when they are first formed.

Another point to be considered is the character of the lumber, for most of the pitch pine which is used for trimmings, etc., will not form a foundation for a good paint, in fact the pitch will force itself out with the heat of the sun and serious difficulty will be experienced.

Water in paint, as in the wood, in any great quantity is an abomination. It is a fraud, worse than a cheapening agent for it deceives in many ways. Neither have we been able to convince ourselves that benzine is a proper substitute for turpentine.

THE NORTH DAKOTA WHEAT CROP

As showing the acreage of wheat in North Dakota and the yield by bushels beginning with 1900 I am indebted to Commissioner Gilbreath of Bismarck:

Year	Acreage	Bushels
1900	2,498,121	19,822,712
1901	3,331,401	45,858,945
1902	2,793,975	43,905,077
1903	3,427,634	48,539,250
1904	4,424,642	57,294,680
1905	4,808,582	73,600,346
1906	5,700,533	72,534,821
1907	4,876,181	54,830,416
1907	4,876,181	54,830,416
1908	5,554,505	69,426,304
1909	6,872,601	

It will be seen that there has been a steady increase in the areas and for the past year we have had the largest acreage in the history of the state, and probably the largest yield when the total results have been gathered. It is clearly evident, therefore, that North Dakota has come to be the first spring wheat state in the Union. Of the total wheat yield probably from 22,000,000 to 25,000,000 bushels are durum, the balance of the wheat being fife and bluestem.

NORTH DAKOTA FARM CROPS

The records, as furnished by the Commissioner of Agriculture for North Dakota, show the crop yield for 1908 on 12,348,447 acres of cultivated land to have been:

	Bushels
Wheat	69,426,304
Oats	34,624,137
Barley	18,121,327
Flax	8,376,854
Rye	432,882
Speltz	1,536,052
Potatoes	2,833,844
Husked Corn	738,876

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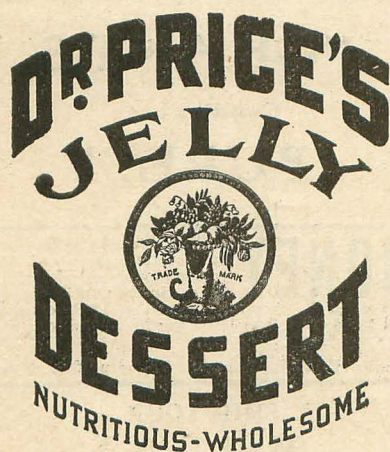
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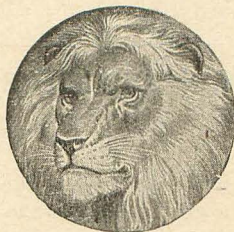
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STRIKE CONDITIONS

Iatho it was claimed that freight traffic was in a "normal condition", not until the 24th of December did our consignment of paper for the December number reach us. We regret deeply this unavoidable delay in publishing.

W. C. Gilbreath, Commissioner of Agriculture and Labor for North Dakota, has just issued an up-to-date map for 1909 giving much valuable information, not only as a map but tabular matter. This map should be in the hands of every reader of The North Dakota Farmer.

It shows the population of our state for 1909 at 609,462,000; the number of farms for the same year was 69,172, and there were 61 incorporated cities, and 142 organized villages and towns.

Last year the total valuation of all property in North Dakota was more than a billion and a half dollars, while the value of the dairy and creamery industry of North Dakota amounted to \$4,000,000.

In 1909 the number of milch cows in the state was 145,784 and the value of the eggs sold in 1908 was \$583,406. The amount paid out for farm labor in 1908 is reported to have been \$8,868,058. The value of fattened animals killed for home use is given as \$1,889,712, while that received for live stock shipped out of the state is \$4,975,658.

GRAND 5-YEAR OFFER, PAGE 13

AN EXAMINATION OF EGGS

At the Kansas State Agricultural College Experiment Station, there has been made a careful examination, including analyses, of eggs for different breeds of hens, the results of which are set forth in detail in Bulletin No. 159.

Data Concerning Eggs, Showing Average of Breeds and General Averages

	Am. R	Pl. R.	S.C.W.L.W.	Wy. G.	Av.
Long diameter of egg.....	56.90	56.15	55.68	55.88	56.12
Short diameter of egg.....	42.11	41.53	41.31	43.05	41.98
Weight to perforate shell.....	6.03	6.33	6.42	6.56	6.35
Average thickness of shell in inches.....	.0133	.0141	.0143	.0138	.0139
Weight of eggs,—ozs.....	1.90	1.85	1.83	1.97	1.88
Percentage of white.....	56.81	56.72	56.65	57.95	57.01
Percentage of yolk.....	33.38	32.99	32.59	32.16	32.75
Percentage of shell.....	9.57	10.09	10.46	9.77	9.99
Percentage of protein in white.....	11.86	11.91	12.58	12.95	12.34
Percentage of water in white.....	88.14	88.10	87.42	87.06	87.66
Percentage of protein in yolk.....	17.18	17.75	17.83	17.50	17.58
Percentage of fat in yolk.....	32.87	31.97	31.80	32.37	32.23
Percentage of water in yolk.....	48.39	48.74	48.76	48.58	48.63
Percentage of ash in yolk.....	1.58	1.55	1.55	1.54	1.55
Percentage of protein in egg.....	12.55	12.62	12.97	13.11	12.83
Percentage of fat in egg.....	10.98	10.51	10.53	10.41	10.59
Percentage of water in egg.....	65.79	66.20	65.55	66.05	65.90

THE WAY OF A POLITICIAN

There are persons who have doubted the ability of Secretary James Wilson as a scientist. There are many who point to a disorganized Department of Agriculture,—says "The National Stockman and Farmer" for October 7th, 1909, editorially,—as evidence of lack of executive ability. But in all discussions of the work of the Secretary during twelve long years there has never been a note of doubt that he was a shrewd politician, with a well-developed bump of self-preservation. We note recently, however, a decline in the power of concealment that is a politician's best weapon, and a tendency to resort to methods that mar a record for smoothness. An illustration is afforded by the late Denver meeting of pure food experts. Our knowledge of the merits and demerits of benzoate of soda comes from scientists who disagree, and so for the moment we leave the matter largely with them. A far more serious affair, as we see it, was the part played by a Cabinet officer in that meeting. Secretary Wilson was present by coteursy of an invitation. He said that he was present only to learn. Of course all well informed members knew that he wanted a resolution passed that would uphold his referee board and discredit one of his bureau chiefs whom he dared not dismiss, but the scientists in convention took it for granted that they would have a free hand in the selection of their own

officials, as any self-respecting association always does have. Certainly there could be no danger that a man possessing the dignity of Cabinet rank would obtrude himself into so delicate a matter. The facts proved otherwise. Secretary Wilson not only went so far as to use his Department solicitor actively, but when a count showed that his choice for president lacked a majority he went into the lobby of the hotel to buttonhole delegates, and he seconded the nomination of his man on the floor of the convention. Dignity and propriety were forgotten in an effort to thwart the will of a convention in which he was only an invited guest.

All this might be classed as merely bad taste, but his descent was only begun. The Department of Agriculture has immense funds and can show substantial favors. Some of our southern states are practically dependent upon the favoring smile of the Secretary. Much agricultural investigation might stop if the beneficiaries ceased to remain in his good graces. Such a condition is an opportunity for men of a certain stamp, and it was embraced.

The majority of the opposition to the Secretary's plans melted; the delegates voted for them with the admission to friends that the welfare of their states compelled it. The frown of a powerful Cabinet officer, with millions at his command for the promotion of agriculture, was potent, and many delegates returned home with amazement that such a thing could be done in a body of scientists, and that a Cabinet officer could so far forget his position and their position. It was a crude thing to be done by a once master politician, and it was a victory dearly bought.

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For one interested in this subject, the Bulletin contains a great deal of valuable information, but, for the general reader, a summary of the findings for the several breeds will be sufficient.

These I have brought together in a table, also the general average for all of the breeds tested.

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Livestock Department

PROF. W. B. RICHARDS, Editor

NOTICE

The Annual Meeting of the North Dakota Live Stock Association will be held as usual this year during the week of the Tri-State Grain and Stock Growers' Convention at Fargo, N. D., on January 18th and 19th. The annual banquet takes place January 18th at 7:00 P. M. after which the annual business meeting will be held. All the members are urged to be present at the banquet and business meeting and a cordial invitation is extended to all interested farmers and stock raisers to become members. Those wishing to join the association should send in their names previously to this time to the secretary. Wednesday, January 19th will be turned over entirely to livestock interests and a very elaborate program has been prepared under the auspices of the Live Stock Association.

W. B. Richards, Secretary.

PROGRAM OF THE NORTHWESTERN LIVESTOCK ASSOCIATION

7:00 P. M. Tuesday, January 18th.

Banquet and Business Meeting.

9:30 A. M. Wednesday, January 19th.

Reflections on Present Day Conditions, Joel Winkler, Division of Dairying, U. S. Dept. of Agriculture.

What Dairying has done for other states. Prof. G. L. Martin, Department of Dairying, N. D. A. C. The Dairy Cow for the Dairy Man. Hon. O. C. Gregg, Lecturer for Farmers' Institutes, North Dak.

1:30 P. M. Afternoon Session.

Value of Laws regulating Horses Offered for Public Service. Prof. W. B. Richards, Prof. of Animal Husbandry, N. D. A. C.

The Bacon Hog for the Northwest, Hary G. Krum, Secretary Yorkshire Breeders' Association, White Bear Lake, Minn.

The Production of Beef Cattle for Market. J. A. Power, Mgr. Hellenale Stock Farm, Power, N. D.

The Place for Sheep in Mixed Farming. George McKerrow, Supt. of Farmers' Institutes, Pewaukee, Wis.

7:30 P. M. Evening Session.

Livestock on the Farm. Col. R. A. Wilkinson, Land Commissioner, G. N. Ry.

Handling Range Bred Ewes on the North Dakota Farm. McLain St Cooper, Hillsboro, N. D.

Relation of Fairs to the Agricultural Industry. E. A. Chamberlain, Supt. of Farmers' Institutes, South Dakota.

1. I have a seven months old colt that has a small rupture at the navel. This happened about five months ago. Will she outgrow it or is treatment necessary? The rupture is about one inch long.

2. I have a 12-year old mare lame in one front leg; has been that way for about three years. At times she is worse. Pressure on the fetlock or pastern joint seems to hurt her. The leg is thicker at this place than the other leg. Can you give me a remedy?

3. What would you recommend as a remedy to rid a seven months old colt of worms?

Answered by Dr. Van Es

1. It very frequently happens that ruptures of this kind disappear of their own account. If, however, the rupture at any time becomes larger or persists beyond a period of one year, I suggest that you have a skilled veterinarian eliminate it by surgical operation.

2. It is impossible to intelligently prescribe for your mare at such a long range, but in our opinion, you will not make a mistake by blistering the parts thoroly, and after that give the horse a prolonged period of rest.

3. We suggest that this colt be given one-half dram of sulphate of iron in his feed twice a day; that this treatment be continued for several weeks. You may also try the effect of a dose of two drams of turpentine given as a drench while suspended in a little milk, but unless the condition is very urgent, we would favor the first remedy suggested.

THE AYRSHIRE COW

C. M. Winslow, Brandon, Vt.

During the past few years, since the Ayrshire Breeders' Association instituted official tests conducted by and under the supervision of the Experiment Stations, the Ayrshire cow has made rapid progress in popularity, as the perfect dairy cow. This official testing has brought to the front a class of dairy Ayrshires, noted for utility, and has more and more influenced the breeders in trying to eliminate any defects she might have, and bring to the front her remarkable qualities as a profitable

dairy cow for every day service. One hopeful feature of the breed is that she has built herself up on all lines of dairy utility in dairy conformation and dairy lines of beauty, and the Ayrshire cow stands today unique among the dairy breeds, with no aristocracy of family distinction, but maintains her popularity from her individual and breed qualities.

While there are minor differences in her appearance, under different breeders, and in different countries, the Ayrshire is an Ayrshire wherever found, and shows the same strong breed characteristics, of shapely udder, strong constitution, and vigorous appetite, shows herself to be a great dairy cow under any and all conditions, and carries the type of the breed in her every act.

In Scotland, in Canada and in the states she has been bred not for family booms, or individual phenomenal excellencies, but all along the line she has been pushed as a breed of uniformly dairy superiority.

This is I believe greatly to her advantage, and greatly to the advantage of all purchasers of Ayrshire cows, for the uniformity of her dairy excellence makes all buyers pleased with their purchases and maintains the general good name of the Ayrshire cow. In studying the results of the testing for advanced registry the two facts are strongly brought out that there is great uniformity in the breed in production at the pail, and while we cannot boast of any world beater in one or two individual cows, we rejoice in the fact that there are none very poor, the general run being from good fair cows to very superior ones.

One very interesting feature shown by the Advanced Registry test is the quick response made to increased food and care given. Some of the herds in the test are fed on what would hardly be called a profitable ration, but these herds show good dairy production, while the herds that are fed for high production, show a remarkable adaptation to respond fully to the more liberal feed. The dairy product in all the herds seemed to follow closely to the food and care bestowed, showing that the Ayrshire could readily conform herself to whatever condition she had to encounter, and would respond accordingly, and always with the largest return possible for food consumed.

The result of the last Home Dairy Test with nine herds of five cows showed the average of the whole 45 cows to be 8959 lbs. of milk and 411 lbs. of butter.

One herd of 5 cows averaged 11562 lbs. of milk and 538 lbs. of butter. The rounding up of the herds at the fairs this fall showed the effect of the labors

GRAND 5-YEAR OFFER, PAGE 13

of the association in the pushing to the front the dairy type of the breed, for at all the fairs both East and West so far as I saw them, the general display seemed to be for utility, and no one could look over the lines of matrons in the ring without being impressed with the effort of the breeders to produce a beautiful dairy cow of great dairy ability.

Nearly all the cows shown at the leading fairs both East and West displayed great square udders with long teats and the uniformity of cows displayed showed what was very gratifying to a lover of the Ayrshire cow, in the fact that all along the line from East to West, in Scotland, Canada and the states, the breeders had the same type in mind and were all trying to breed the perfect cow, and that in that perfection utility stood out prominently at the front.

At the Iowa State Fair in the breed contest at the pail, the Ayrshire won 1st and 2nd for butter and milk.

At the Maine State Fair the Ayrshire won 1st at the pail for dairy product over other breeds.

At the Alaska-Yukon-Pacific Exposition, in the sweepstakes for all breeds, the Ayrshire herds won 1st and 2nd for uniformity in breeding. Every indication points to a gratifying future for Ayrshire cattle and all that is needed is for breeders to strive to bring out the best, always, and never forget to strive for perfection in the Ayrshire cow.

The quickest, surest, and most satisfactory way to improve the breed and bring it to the highest perfection is to use only strictly first class bulls, from

the best cows to be found, cows with great dairy capacity, shapely udders and long teats, and to this end all breeders of Ayrshires can do great work for the breed by killing all bull calves that are not from grand cows, with shapely udders and long teats. The breeders of Ayrshires are the ones on whom rests the future of the breed.

J. W. Wampler

Bordulac, N. D.

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First class harness leather,
at 16 cents a pound.
Samples Free.

BLACK'S HIDE & FUR CO., Durand, Wis.

OUR AWL OFFER

Not long since the writer saw a street vender selling Meyer's Awls at one dollar each to a crowd of eager farmers. We offer the same awl **free** for a two years' subscription, or for two new subscriptions. Think of it! See Page 10

Try our Classified Ads. The cost is reasonable.

NORTH DAKOTA FARMER

ST. PAUL UNION STOCKYARDS COMPANY

REPORT FOR NOVEMBER, 1909

RECEIPTS

	Cattle	Calves	Hogs	S heep	Horses	Total Cars
C. R. I. & P.	173	28	814	486	3	23
C. G. W.....	716	53	4983	1178	27	109
C. M. & St. P.	6684	493	16115	13260	68	554
M. & St. L.....	1519	166	8467	780	.....	184
C.St.P.M.& O	2620	253	16849	8794	3	393
C. B. & Q.	365	113	2568	1518	.....	63
Wis. Cent.....	178	30	928	141	.....	17
M.St.P.&S.S.M	9726	1441	8437	6093	4	509
Gt. Nor.....	26958	2283	16851	25421	26	1434
Nor. Pac.....	17754	1211	4417	34119	154	901
S. Y. T. Ry.Co.	.....	.....	.....	.....	.....	.....
Driven in.....	793	64	475	122	1	.....
Total.....	67486	6135	80904	91912	286	4187

Tot. Last yr. 52124 4952 140381 55864 321 3875

SHIPMENTS

	Cattle	Calves	Hogs	Sheep	Horses	Total Cars
C. R. I. & P.	2089	136	.....	831	53	80
C. G. W.....	5520	239	1049	12940	11	276
C. M. & St. P.	7377	308	7	9209	2	315
M. & St. L.....	567	11	.....	1258	.....	31
C. St. P.M. & O.	10745	502	5000	8686	104	507
C. B. & Q.	16384	252	6247	8545	23	707
Wis. Cent.....	662	11	1642	8658	.....	78
M.St.P.&S.S.M.	577	113	.....	813	.....	31
Gt. Nor.....	371	2	.....	7905	26	55
Nor. Pac.....	476	115	53	3212	34	40
S. Y. Ter....	.....	.....	.....	.....	.....	.....
Driven out.....	877	308	127	725	69	.....
Total.....	45645	1997	14125	62782	322	2120

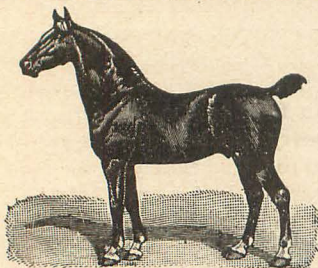
Total L. yr. 36191 1502 32266 41005 352 1767

SUMMARY 11 MONTHS

	Receipts			Shipments	
	This Year	Last Year		This Year	Last Year
Cattle.....	400523	380179		282912	276740
Calves.....	76284	59778	Calves.....	27595	12646
Hogs.....	661336	1006192	Hogs.....	126455	225062
Sheep.....	461119	326096	Sheep.....	319207	219296
Horses.....	5498	6855	Horses.....	5503	6461
Cars.....	26313	28090	Cars.....	12740	12517

Warranted to Give Satisfaction.

Gombault's Caustic Balsam



Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for
Curb, Splint, Sweeney, Capped Hock,
Strained Tendons, Founder, Wind
Puffs, and all lameness from Spavin,
Ringbone and other bony tumors.
Cures all skin diseases or Parasites,
Thrush, Diphtheria. Removes all
Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism,
Sprains, Sore Throat, etc., it is invaluable.
Every bottle of Caustic Balsam sold is
warranted to give satisfaction. Price \$1.50
per bottle. Sold by druggists, or sent by ex-
press, charges paid, with full directions for
its use. Send for descriptive circulars,
testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.

DIRECTIONS FOR THE HOME PASTEURIZATION OF MILK

By L. A. Rogers, Bacteriologist, Dairy Division.

Milk delivered in the cities in the summer months frequently contains bacteria in such large numbers that it is not a safe food for children, especially for infants whose food consists entirely of milk. In many cities a special milk can be secured, but this is sometimes difficult and always involves additional expense.

Under such circumstances it is advisable to pasteurize all milk consumed by small children. The pasteurization should be done in such a way that disease-producing bacteria as well as those likely to produce intestinal disturbances are destroyed without at the same time injuring the flavor or the nutritive value of the milk. This may be accomplished in the home by the use of a simple improvised outfit.

Milk is most conveniently pasteurized in the bottles in which it is delivered. To do this use a small pail with a perforated false bottom. An inverted pie tin with a few holes punched in it will answer this purpose. This will raise the bottles from the bottom of the pail, thus allowing a free circulation of water and preventing bumping of the bottles. Punch a hole thru the cap of one of the bottles and insert a thermometer. The ordinary floating type of thermometer is likely to be inaccurate, and if possible a good thermometer with the scale etched on the glass should be used. Set the bottles of milk in the pail and fill the pail with water nearly to the level of the milk. Put the pail on the stove or over a gas flame and heat it until the thermometer in the milk shows not less than 150 degrees nor more than 155 degrees F. The bottles should then be removed from the water and allowed to stand from twenty to thirty minutes. The temperature will fall slowly, but may be held more uniformly by covering the bottles with a towel. The punctured cap should be replaced with a new one, or the bottle should be covered with an inverted cup.

After the milk has been held as directed it should be cooled as quickly and as much as possible by setting in water. To avoid danger of breaking the bottle by too sudden change of temperature, this water should be warm at first. Replace the warm water slowly with cold water. After cooling, milk should in all cases be held at the lowest available temperature.

This method may be employed to retard the souring of milk or cream for ordinary uses. It should be remembered, however, that pasteurization does not destroy all bacteria in milk, and after

NATIONAL DAIRY SHOW DE LAVAL BUTTER AWARD TRIUMPH AS USUAL

The great NATIONAL DAIRY SHOW was held at Milwaukee, Wis., October 15-24, and in keeping with the invariable result since "ALPHA-DISC" DE LAVAL CREAM SEPARATORS went into use all the HIGHEST BUTTER and CREAM awards went to DE LAVAL users, in this latest representative contest, which included the exhibits of nearly one thousand of the best butter and cream producers throughout the country.

The three highest awards in the CREAMERY BUTTER class—all to DE LAVAL users—were as follows:

A. J. ANDERSON, Otisco, Minn.,	Score 97
THOR. MOE, Winthrop, Minn.,	Score 96½
A. L. OESTRICH, Watertown, Wisc.,	Score 96

The highest award on DAIRY BUTTER was to P. Daingaard, Camp Point, Ill.—Score 94½—a DE LAVAL user.

The highest award in the CERTIFIED CREAM contest was to G. Van B. Roberts, Highland, N. Y.—Score 99—a DE LAVAL user.

As has been said before, the separator does not of itself insure the making of the best butter, but the superior mechanical and sanitary bowl construction and low speed of the DE LAVAL separator indisputably enable the production of better cream and better butter under the same conditions than can possibly be made in any other way.

This is something that even the most enterprising and resourceful of those who seek profit through the manufacture and sale of would-be competing separators never attempt to explain or deyn,—that practically all the best butter, as evidenced by the highest awards in all representative butter contests, is and has for more than twenty years been made by users of DE LAVAL cream separators.

Hence the great advantage to every DE LAVAL user in having the separator that not only makes the MOST but the BEST cream and butter, is the simplest and easiest machine to use and lasts an average of twenty years against from two to five years in the case of all others.

A DE LAVAL catalogue helps to make plain the reasons for DE LAVAL superiority in good buttermaking and other respects, and is to be had for the asking.

THE DE LAVAL SEPARATOR CO.

42 E. MADISON STREET
CHICAGO
1213 & 1215 FILBERT ST.
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DRUM & SACRAMENTO STS
SAN FRANCISCO

General Offices:
165 167 BROADWAY,
NEW YORK

173-177 WILLIAM STREET
MONTREAL
14 & 16 PRINCESS STREET
WINNIPEG
107 FIRST STREET
PORTLAND, OR G.

pasteurization it should be kept cold and used as soon as possible. Cream does not rise as rapidly or separate as completely in pasteurized milk as in raw milk.

SEVENTEEN STOCK ASSOCIATIONS HAVE ADVISORY BOARDS RECOGNIZED

During the past year seventeen associations of western stockmen have applied to the Forest Service for the recognition of their Advisory Boards, swelling the total number of associations thus recognized to forty-six. The recognition accorded entitles an association to receive notice of proposed action, and an opportunity to be heard by the local forest officer in reference to increase or decrease in the number of stock to be allowed the following season, the division of the range between different classes of stock and their owners, or the adoption of special rules to meet local conditions, and in every case the recommendations of the Advisory Boards are followed as far as the rights of non-members, and the other interests involved, will allow.

This cooperation is of value both to the stockmen interested and to the government. The stockman is afforded an opportunity to work out his own destiny; the government has the benefit of his training and experience in meeting the complicated situations which arise in connection with its administration of the National Forest land. By this means the division of the range between cattle and sheep is conducted amicably, bringing about an absence of ill feeling and bitterness. The necessary reductions to provide for new owners or prevent damage to the range are distributed to the best advantage and in the way which will cause the least inconvenience or loss to the ones affected. Seasons are established which will secure a maximum of use of the range with a minimum of damage; and questioned fees are promptly adjusted, while conflicting claims to ranges and resultant disputes are settled within the association more often than by appeals to the government officers. Wherever an association is organized local administration follows.

It is the policy of the Forest Service to make every National Forest as self-

administrative as conditions will permit, and it has welcomed the hearty cooperation of the stockmen. Formal recognition will be granted an association whenever its membership constitutes a majority of the users of the forest or division for which it seeks recognition, and every facility will be afforded the members to maintain the organization as a cooperative unit of the national administration.

GRAND 5-YEAR OFFER, PAGE 13

CLASSIFIED ADS.

HORSES

FOR SALE

Percheron, Belgian and Shire horses
J. W. & F. T. PETERSON, Litchfield, Minn.

MEADOWBROOK STOCK FARM. Clydesdales and Shetland Ponies, imported and home bred. Prices reasonable and terms to suit. Write or come and see me. **GEORGE LANG, Mapleton, Minn.**

CATTLE

North Branch Stock Farm. High class Short-horns. Herd, bull, Supreme Judge 177722—pure Scotch. **John Donnelly, Grafton, N. D.**

REGISTERED RED POLLED CATTLE

Young Stock of Both Sexes For Sale.
C. G. FAIT & SON, Monango, N. D.

FOR SALE: A fine purebred registered Holstein-Friesian bull one and one half year old, of the famous DeKol and Pietertje families, the best dairy breed in the world.

F. J. STEIDL,
Wheaton, Minn.

FOR SALE

GALLOWAY CATTLE

J. W. & F. T. PETERSON, Litchfield, Minn.

FOR SALE: About twenty head of Aberdeen-Angus cattle, consisting of well-bred cows, heifers and a few good bulls. Special prices to move these within the next sixty days.

GEORGE A. McFARLAND,
Valley City, N. D.

SWINE

POLAND CHINA PIGS, also Shropshire sheep. Seed grain. **GEO. N. SMITH,**
Amenia, N. D.

MISCELLANEOUS

Envilla Stock Farm, Cogswell N. D. will quote you special prices on Angus Cattle, Shetland Ponies, Duroc Jersey Hogs, Wolf and Fox Hounds, Fancy Poultry, Pet Stock and Ferrets.

FOR SALE: Two thoroughbred Spanish Jacks raised in Minnesota. Four registered short horn Bulls. **T. K. TOBIASON, Kempton, N. D.**

FAIRVIEW STOCK FARM. Breeder of Short Horn Cattle, Mammoth Bronze Turkeys and B. P. Rock Chickens. Young Stock for Sale.
F. R. HAMMOND, Prop., Bismarck, N. D.

DON'T FORGET

We have Angus Cattle, Oxford Down Sheep, White Holland Turkeys, White Phymouth Rocks and Pekin Ducks for Sale.

All stock full blood and registered.

WILLOBANK FARM
Eastgate Bros., Larimore, N. D.

CENTRE-LANE STOCK FARM

BREEDER OF: Black Percheron and Hambletonian Horses, Red Polled Cattle, Poland China Hogs, White P. R. Chickens, White Holland Turkeys, White Embden Geese, White Pekin Ducks and White Guinea Fowls.

GROWER OF: Minnesota No. 169, Spring Wheat, Swedish Select Oats, White Hulless and Success Beardless Barley, Turkey Red Winter Wheat, N. D. 959 Winter Rye, Northwestern Dent Corn, Early Ohio Potatoes, Timothy and Alfalfa.

Young Stock and Pure Seed, for sale. Write me for particulars.

J. A. ENGLUND, Prop.

Kenmare, North Dakota.

THE ENVILLA STOCK FARM

COGSWELL, NORTH DAKOTA

SHETLAND PONIES for the Children

HIGH GRADE REGISTERED ANGUS CATTLE

HEAVY DRAFT MARES AND COLTS

PET STOCK OF ALL KINDS **POULTRY, Fancy, High-bred**

We can suit you in both quality and prices

L. H. WHITE, Proprietor,

Cogswell, N. D.

LISBON TANNERY

Hides, Furs and Robes

We tan Horse and Cattle Hides. Skins of all fur animals for Robes and Coats. Oak Harness and Lace Leather. Robes are our specialty. No Complaints. Skilled Labor. Twenty-five years' experience. All work guaranteed. Pay highest market price for Hides and Skins. We keep a line of Harness Leather and Robes for sale. We pay the freight on Green Hides for Robes and Leather. Send for price list and shipping tags.

Lisbon, N. D.

OTTO JENSON, Proprietor.

Poultry Department

Prof. O. W. Dynes, Agricultural College

FEED AND CARE OF LAYING HENS

Grains Excellent for Poultry Food

The great variety of smaller cereals grown on the average North Dakota farm make the adoption of a liberal ration for the farm flock of poultry practicable. All of the staple grain products of the farm, with the exception of flax, make desirable poultry foods. Wheat ranks high as feed for laying hens, but is slightly more expensive than many of the other grains. Oats is a highly nitrogenous food and should form a large part of the grain ration for the flock. The fowls do not readily take to barley but when it is fed in a mixture of grains it will be found quite useful. Millet is also a good food in a mixed grain diet for fowls and especially for growing chicks. Corn is one of the most valuable poultry foods which can be procured. It is particularly commendable for a winter ration, but as it is not yet generally grown in this state, except for fodder, little of the grain is being fed to poultry. Corn is a cheaper feed than high grade wheat and if it is in part substituted for the latter, a better and more economical ration will be furnished. The poultry feeder should aim to give the greatest possible variety of grains in making up a daily ration for his flock.

Method of Feeding

The plan of feeding laying hens followed at this station is substantially as follows:

Morning—Whole wheat.

Noon—Mash of kitchen scraps, bran or middlings, ground corn or barley meal, and beef scraps or green cut bone.

Night—Oats and shelled corn, or corn on cob.

This makes a good winter ration with the addition of green food (cured lawn clippings) to go with the mash. For summer feeding the whole corn can be dispensed with during the warmer months, as the heavier fowls are likely to lay on too much flesh if fed corn in any quantity. The mash may be omitted from the ration of fowls having freedom of range, but it will still be found profitable if fed in reduced quantities.

The hens in winter quarters are fed the morning feed of wheat in a deep litter of straw. The mash feed at noon is mixed in a trough which has narrow sloping sides and a flat bottom. The mash consists of equal parts of bran and middlings, with the same volume of ground barley and these ingredients mixed with scraps from the kitchen.

The scraps consist of cooked vegetables, broken bread, pieces of meat, etc., and are eaten with great eagerness by the fowls. Dried beef scraps are added and the whole thoroly mixed with a shovel. Just enough water is used to make the mash crumble easily during the process of shovelling. Sloppy mashes should be avoided. When sour milk is available, it takes the place of water. The mash is fed in low V-shaped troughs and the fowls are given all they will eat up clean. Three times a week, green food, in the form of the dried cuttings from a blue grass or clover lawn, is furnished the hens. This is fed with the mash, about one-fourth the total bulk of the mash being grass and clover. Previous to feeding, the green food is placed in a pail and scalded by pouring on boiling water, after which it is left to soak for several hours. The night feed of mixed oats and corn is fed in a deep litter of straw as described for the morning feed. A plentiful supply of fresh water is furnished daily, and oyster shell and grit are before the birds at all times. Vegetables, such as cabbage and roots of various kinds can not always be procured but when available they are supplied to the fowls in moderate quantities. Corn is substituted for the barley a portion of the time.

How Much To Feed

The exact quantity of feed to be given in a daily ration to a pen of laying hens, or to a number of stock fowls, cannot be stated definitely in a single rule which will apply in every case. The breed of fowls, the time of the year, and the condition of the birds, are features that must be taken into consideration. A Leghorn will not eat as much as a Cochon and yet she requires more feed in proportion to her weight than a larger fowl. Hens laying in winter quarters should receive more feed than during the heat of summer. To get over fat hens back into laying condition, place them on a light diet until the surplus flesh is removed. A heavily laying fowl can scarcely be overfed, but on the other hand, the good feeder will always aim to have the hens eager and anxious for their feed at meal time. Much depends on the judgment of the feeder.

The plan followed with the Station flock, in the ration prescribed for laying hens, is given here, not because it will prove the best one under all circumstances, but with the hope that it may be of some help to the beginner. One quart of wheat was fed in the morning to each pen of twenty fowls. At noon all the mash was given to them that they

would promptly eat up clean. At night, one quart of oats, and all the corn they would pick from the cob before going to roost, formed the evening meal. This was the maximum allowance for each twenty fowls, but the actual amounts fed sometimes varied from these figures.

Some care is required in feeding meat or animal foods. If fowls are given all they will eat of green cut bone, bowel trouble may result. Many poultrymen recommend letting the fowls have free access to dried beef scraps. This has been tried with good success at the Station with several laying hens confined during the summer months. The fowls ate considerably more than would have been fed to them in the mash, but no ill effects were observed. North Dakota Bulletin No. 78.

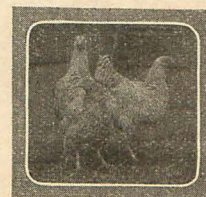
POULTRY EN ROUTE

Following the advice sent out some months ago that the Northern Pacific Railway had secured a poultry farm of its own in the state of Washington, and was operating its own bakeries in Seattle, comes the word that this same company has arranged to secure the entire supply of water used on all of its dining cars from springs located at Detroit, Minnesota. The water is filtered before being bottled and is distributed to various points on the system by a special refrigerator car, which makes a trip every ten days over the line, unloading full bottles on the outgoing trip and picking up empties on the return.

No other water will be used for drinking purposes on any of the Northern Pacific dining cars.

With eggs and chickens from its own poultry farm, bread, cakes and pastry from its own bakeries, a special brand of unsalted butter from the Yakima Valley creamery, its mammoth selected potatoes which have won a reputation of their own, and lastly its Pokegama water bottled at the springs, the Northern Pacific is making some unusual bids for patronage in its dining car service.

GRAND 5-YEAR OFFER, PAGE 13



Plymouth Rock Poultry. Line bred from nation's greatest prize winners. Eggs at \$2.00 per setting. A few choice cockerels for sale at \$5.00 each.

H. C. Harty,
Bottineau, N. Dak.

45 BREEDS Pure bred Chickens, Ducks, Geese, Turkeys, Incubators, Supplies, and Collie Dogs. Send 4c for large Poultry book. Incubator Catalog and Price List. H. H. HINIKER, Dept. 16, Mankato, Minn.



WINTER EGGS—HOW TO GET THEM

Geo. Hausmann, Hillsboro, N. D.

This subject has been, and will be, greatly discussed in the different poultry and farm papers. Many have been trying to give the farmer and those interested in poultry, their ways of doing things, which as a rule are good, but go thru too much work for the average farmer.

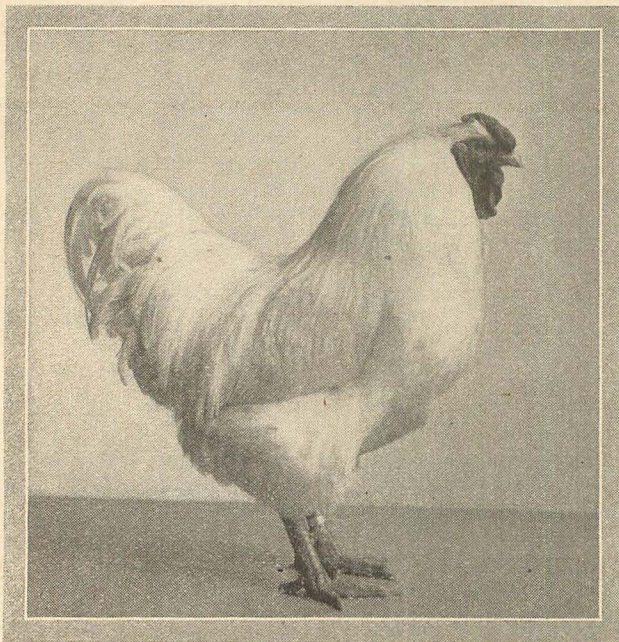
The farmer needs poultry, and good poultry, but he cannot devote his entire time to it either. It shall be our aim to give the ways we feed as short as possible, and as our way has proven our success, it may be of interest to some of those who read this article.

foods. Blood meal and beef scraps, the meat foods.

Now, how to feed? This is the question asked by many. We feed on the following plan: grain twice a day. The morning feed consists of almost always oats (sometimes mixed with barley or millet) which is thrown into a litter. There cannot be any certain amount of grain fed, for the reason different fowls eat more than others. The way to tell whether feeding enough or not is to examine the litter. So much must be given in the morning feed, that, when feeding in the afternoon that there will be a little left in the litter. Litter must be 6 to 8 inches deep. Make them work for their whole grain. The afternoon feed—feed plenty early, so that fowls

them the same rations all the way thru your feeding. What is called overfeeding is in reality a bowel trouble, caused by giving them a certain food (too much of any kind) that they are not used to. This will cause bowel trouble and is called by many "overfed" but it ought to be called "misfed." Therefore, if you intend to change food, do so gradually.

In conclusion will say, that we do not think this the only way to feed for eggs, in fact, we know it is not. We have experimented a lot along this line, and find our present way of feeding the best. In writing this we take it for granted that the hens were kept in the proper way. Namely, the hen house clean and dry, free from vermin, and not overcrowded. So much for the benefit of some who may read this subject.



White Wyandotte Cock. Won 1st at St. Paul and Fargo. Judge Tucker pronounced him the equal of the 1st of Chicago. Bred and exhibited by Hausmann Poultry Farm, Hillsboro, N. D.

The things necessary to produce eggs are: a good flock of fowls, barn, feed, and of course the care. By a good flock we understand, fowls that are healthy, the right kind, and in general in such a condition that they would lay, if fed properly. By a barn we don't understand an expensive affair, as the most of them do, but one that is well ventilated, and has an ample space for the sunlight to come into. Many have the idea that it takes a double-walled affair, or that it will have to be heated artificially. Neither one of these two things is necessary. Our barn is a one board affair (shiplap) with paper on the outside. We do not use artificial heat. This barn has proved plenty warm or *at least eggs have never failed to come.* The feed is very simple. Wheat, oats, corn, barley and millet are the grain foods. Mangels, cabbage, lawn clippings, alfalfa and clover, the green

have enough time to feed in, before dusk—may be wheat. During coldest weather we feed corn. We often feed both corn and wheat, some fowls do not care much for corn until they get to know it. During noon hours, they get their green food as a rule. We have no certain rule, but we keep it before them all the time. Cabbage and mangels being fed.

Besides these regular meals, we keep a dry mash before the fowls all the time (using hoppers). This mash consists of bran, ground oats, barley, corn and either blood meal or beef scraps, mostly both, and either cut alfalfa, clover or lawn clippings. Always keep grit, bone, oyster shells and charcoal before the fowls. Drinking fountains must be kept clean. Milk is also fed. Some people have the idea that you may overfeed the fowl. Let us here state, that you cannot, providing you give

EXCERPTS FROM "COMMERCIAL POULTRY"

Feed your young hens as great a variety as possible. This is the way to keep them healthy and encourage egg-production.

Give a hen a warm house to live in during the winter and the proper variety of food and she will produce eggs in abundance if she will at any time in the year.

If you have any scrub chickens in your yards, weed them out. Fill up with standard bred ones, and you will be better satisfied, both with yourself and your chickens.

The water fountains need special attention at this time of the year. It is a good plan to empty them every night and then refill them in the morning with quite warm water.

Baby Chicks, 8 Cents Each. Shipped anywhere. Safe arrival guaranteed. Eggs for Hatching \$4.00 per 100. Culver Poultry Farm, 1020 Reed St., Benson, Nebr

EGGS for hatching from 26 leading varieties. Bronze and W. Holland Turkeys, Pekin ducks and chickens. Catalog free. L. GULDEN, OSAKIS, MINN.

Silver Laced Wyandotte and Pullets, \$1.00 each. Order Soon. WYANDOTTE FARM, Woods, N. D.

HAUSMANN POULTRY FARM
Breeders of W. Wyandottes and S. C. W. Leghorns
Hillsboro, - North Dakota

MAMMOTH BRONZE TURKEYS
from winning stock
EDGEWOOD FARM, R. F. D. 2, Fargo, N. D.

Make Your Hens Lay More Eggs

I have a method that will make your hens lay every day; it never fails. Write for it,

MRS. B. F. WILCOXON,
Hillsdale, Wyo., Dept. 5

If there are any feather pullers in the flock, soak some bitter aloes in alcohol and thoroly soak the feathers of the denuded birds. One application is generally enough.

Birds that were slow in going thru the moult, or failed perceptibly, should not be retained as breeders. They have a weakness that it is not desirable to perpetuate in the flock.

Don't be too hasty in finding fault with the awards in the show room. Remember it is the easiest thing in the world to find fault, especially when your particular pet bird failed to win a coveted prize.

It is not too early to begin to watch the hens with a view to making up the breeding pens. By closely watching the flock from now on, the best layers may be selected and the little faults detected and the matings made strong.

The best way to protect poultry at night in very cold weather is to have curtains arranged to drop around them during the cold weather. This prevents the escape of heat to a great extent and still leaves free access to pure air.

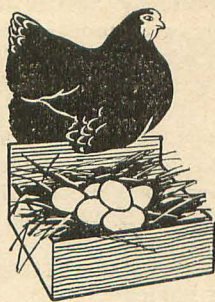
Egg eating is a vice that should be guarded against. It is easily prevented by making the nests rather dark, giving plenty of nest room and not overcrowding the poultry house. Keep the hens busy scratching and they will not learn to eat eggs.

The bath is just as necessary to the feathered tribe as to the human family, and is enjoyed a great deal more by the fowl than by some people. Man keeps himself clean by bathing in water, the fowls keep themselves clean and free from vermin by bathing in dust. The wise poultryman anticipates the needs of his fowls and lays in a supply of fine dust for use in the dust-box next winter. If he doesn't have time to gather the dust himself, he can well afford to hire it done. A wagon load of dust or dry earth is worth, at least \$5 to any poultryman with fifty or more fowls. A lousy hen will not lay eggs, and we don't blame her. Without a dust-bath it is almost impossible to keep the fowls free from vermin, but given a box of good dry dust to wallow in daily she will keep herself free from the pests.

The poultryman should be methodical. He should have regular feeding hours and regular hours for attending to all the duties devolving upon him.

Avoid feeding stimulants to fowls which you are going to breed from, and do not give them any more food than they will eat up clean. That which is left will become filthy.

There is no economy in feeding musty grain of any kind, even if it can



Getting Eggs In Winter Is Getting Money

Those who get eggs then make money fast. If you don't get them you have missed some point that might not have cost you a cent but would make you dollars if you knew it. We have arranged to furnish our readers the **secrets of the most successful egg producers**, men who make money, and an illustrated description of how it is done on one of

America's Most Profitable Egg Farms

Also a year's subscription to Poultry Herald, an illustrated, monthly paper devoted entirely to "Successful Poultry Keeping." It is always full of practical, seasonable information that poultry keepers need and every issue has Turkey Dept., Ducks and Geese Dept., Question Dept. (where questions are answered free,) Disease Dept., etc. Regular price 50 cents a year

To Help You Make Poultry Pay

We have made arrangements to give you these **secrets**, also Poultry Herald one year and this paper for only a few cents more than the regular price of this paper alone. Don't delay: begin now and get eggs when the price is highest.

Our Offer: N. D. FARMER and Poultry Herald 60c

"GETTING EGGS IN WINTER" absolutely free with this offer.



be had for a quarter of the price of good grain. The fowls will eat it if other food is withheld, but it is not good for them.

McCLURES MAGAZINE wants a responsible and energetic man or woman in your town to attend to its subscription interests. Experience unnecessary. There is liberal guaranteed compensation. A profitable permanent business without capital can be established among friends and acquaintances. Whole or spare time. This is the best time to start. Complete outfit and instructions **free**. Write now. McClure's Magazine, 46 East 23d Street, New York City.

Oak Hill Poultry Ranch

ALEXANDRIA—MINNESOTA

Eggs for Hatching from Pure Bred Poultry, with Farm Range, and large Runs. Mammoth Toulouse Geese Eggs 25c. Imperial Pekin Duck Eggs, \$1.00 per 11. R. C. White and brown Leg-horns. English Red Caps, R. C. R. I. Reds, Barred and Buff Rocks, White Wyandottes and Light Brahma's Eggs for sale, \$1.00 for 15. FOWLS FOR SALE.

Shade Trees and Gardens.

C. B. Waldron, N. D. A. C., Editor.

PRESERVING POSTS. THE BEST TREES

R. E. B., of Underwood, North Dakota, makes the following inquiries:

1. Can you give me a way of treating dry ash posts so as to preserve them from decay when set in the ground?
2. What trees are best adapted for this part of the country,—North Carolina poplars or native cottonwood, or what would you suggest?

In reply to the first question I will say that creosote is the material most commonly used for preserving wood that is to be used in contact with the soil. The methods of applying this are numerous, depending upon the amount of material to be treated and the uses to which it is to be put. Railway companies have installed expensive plants for impregnating railroad ties and other timbers with creosote. This plant consists essentially of a steel tube or cylinder about four feet in diameter, and ordinarily 60 feet in length, about. The

ties are laid on small cars and run into the cylinder. The wood is then steamed under a pressure of about twenty-five pounds for a period of from two to four hours. The steam and air is then pumped out, leaving a partial vacuum in the tube. Creosote is then forced in under high pressure. As the air has been forced out of the wood cells the creosote under pressure enters, thus thoroly impregnating the wood. For treatment of posts a similar effect is produced by submerging the lower end of the post in very hot creosote for a period of about thirty minutes. This expands the air in the wood cells and much of it is forced out because of the pressure. The posts are then transferred to cold creosote. The air in the wood cells contracts, making a partial vacuum, thus driving the creosote into the cells of the wood for a considerable distance.

Some timbers take up creosote much more readily than others. The cotton-

wood takes it so readily that the expense is almost too great. The basswood, on the other hand, takes up so little that it does not resist decay.

Open grained hard woods, like the ash, are treated very successfully.

In reply to your question No. 2, I will say that the Carolina poplar is simply the eastern form of cottonwood. It differs but little from the native cottonwood and is not so well suited for general planting as the native tree. The only advantage that it has over the native tree is that it holds its foliage longer in the fall and is less likely to rust. On the other hand the Carolina poplar is not so hardy and is quite subject to sun-scald. Neither of these trees is suitable for general planting. The Carolina poplar can be used successfully in a small way where a quick growing shade tree is desired. In this respect it is an advantage over the cottonwood. The cottonwood may be planted as a single row of trees along a lane or street or it may be planted in a grove on a soil that has a water table within ten feet of the surface. Planted on uplands the cottonwood is a very short lived and unsatisfactory tree. Where the water supply is abundant it grows rapidly, but it never makes a growth sufficiently heavy to keep down the grass and weeds. In a plantation where the moisture is sufficient it will increase at the rate of about five cords of wood per acre annually.

The best trees for general planting are the native ash and the white willow. The ash will grow in any place where any tree may be expected to thrive. Its rate of growth is much slower than the cottonwood at first, but for a series of years in a reasonably good location its growth will average one and a half feet per year. The timber is much more valuable than that of any other tree that can be successfully grown in North Dakota. The willow requires more moisture than the ash, but will thrive in any location where agricultural crops can be grown. It makes a much better shade than does the cottonwood, and one can grow more than twice as many trees to the acre. Its increase is about the same as that of the cottonwood where the latter is grown where it has a constant water supply.

In a government publication recently sent out measurements of white willow groves show that the cash returns was \$24 per acre each year. This is where the trees were used for posts.

It may not generally be known that the white willow, when cut in the winter, peeled and seasoned, makes a very durable post, lasting from six to eight years in moist soil. When treated it will last twice as long as that.

As against the profit in growing white willows for posts we may mention the fact that box-elders gave a profit of only thirteen cents per acre annually. The wood in this case was of course used for fuel.

Up to the present time there is no tree which seems to promise the same return as does the common gray or white willow.

C. B. Waldron.

NORTH DAKOTA SEEDSMEN AND DEALERS TAKE NOTICE

Various seedsmen and dealers in the state probably have in stock considerable old seed. Some of this seed is probably quite good; some of it very bad because of age and the conditions in which it may have been stored. Some varieties under proper conditions keep several years without injury, and others lose their germination quality very rapidly.

Dealers and merchants should make a careful inventory of such old stock, and find out as to its quality. The North Dakota Seed Law contemplates as thorough inspection of the seeds placed upon the market as is possible, and calls for a publication of the results. It is therefore important to every seed dealer that the seeds which he has for sale should be of as high quality as possible, as to purity and as to viability.

The seed control laboratory makes tests free of charge for any citizen of North Dakota. Those who expect to buy or sell seeds should allow as much time for the tests at the laboratory as possible before they actually need the report. The tests are taken up in the order received. Germination tests require from 4 to 20 days, according to the kind of seed. Purity tests require from one hour to several hours, according to the sample. Usually reports of purity

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can be out within a day or two from receipt of the sample. Reports may be had by telephone or telegram if desired, at the expense of the applicant. Records for samples submitted by seedsmen, merchants or dealers with a view to purchase or improvement are kept separate from all records of samples procured on the open market or by inspection. This places the dealer on the same plane as the individual buyer of seeds. It is the aim of the laboratory to aid in every way it can to improve the quality of seeds placed in the hands of the planters of North Dakota. It is hoped that the seedsmen of the state will find the laboratory of much use to them in deciding upon the purchase of stock. Reports from the laboratory are intended to show exactly what the sample of seed contains, both by count and by weight, and when necessary to make a germination test, the percentage of seeds that may be expected to grow, etc.

All persons, whether seedsmen or individual purchasers, when sending samples to the laboratory for test should number each sample and in the accompanying letter of information state from whom the sample was procured, and when. Reports will not be made without this information. All seeds placed on the market should be labeled to comply with the law, copies of which may be had upon application.

H. L. Bolley,
State Seed Commissioner.

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25 Cents.

Will grow in the house or out of doors. Hyacinths, Tulips, Gladiolus, Crocus, Fuchsias, Oxalis, Tuberose, Begonia, Jonquils, Daffodils, Chinese Lily, Dewey Lily, Gloxinia, Lilies of the Valley—all postpaid, 25c. in stamps or coin. As a premium with these Bulbs we will send FREE a big collection of flower seeds—over 200 kinds.

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School and Home

WINTAH

FLOYD D. RAZE, ANAMOOSE, N. D.

De woodchuck's in his burrow,
An' de Wintah, it am come,
De snow am in de furrow
An' de brook am frozen dumb,
De robin dat by summah
War so sassy an' so lippy
Am now de lates' cummah
To de state ob Mississippi.

E'en de flowers dat smelled so sweetly,
All de mignonettes an' roses,
Dey hab vanished too, completely,
Frum de vishun ob ouh noses;
An' dar 's nuffin lef' to cheah me
Ob de summah's golden glory
'Cept to ax yo' all to heah me
Tell de sad, lamenshus story.

Dough de jay am still aroun' us,
He mus' tak' de consequences
Foh dar 's snow enuff to drown us
On de top ob all de fences,

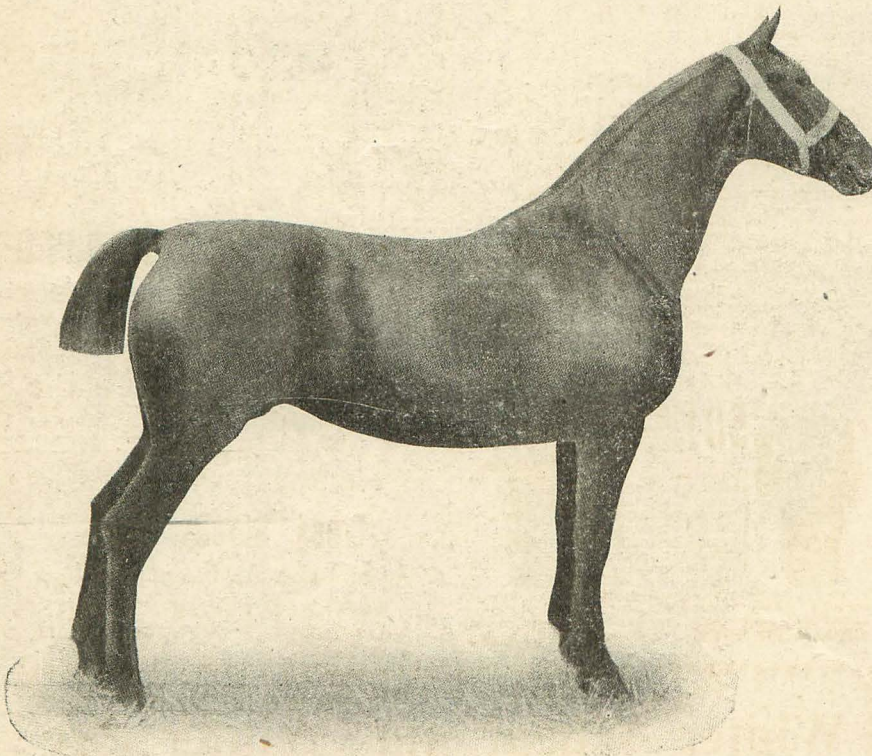
While de chimbley 'sports a mitah
High enuff foh ol' Saint Petah,
An' de co'n shocks all am whitah
Dan de ghos' ob Julius Caesah.

De bluebird, how ah miss him
Wif his summah-time hosanna!
An' de oriole, Lor' bless him,
Way down dar in Loosiana,
He am happy now as evah,
'Scapin' all de win's dat vex us,
While de wil' goose haunts de rivah
Rio Grande down in Texas.

Dar's de snowbird in de pasture,
Dar's de rabbit in de bushes,
But ah doan pahceive de laughter
Ob de happy, long-tailed thrushes,
An' ah doan pahceive de brightness
Ner de sweetness ob de clovah,
Foh dis robe ob wintah whitness
Done hab made de whole worl' ovah.

LESSONS IN ELEMENTARY AGRICULTURE

BY G. W. RANDLETT, A. C., N. D.



A Typical Coach Horse

Horses

(a) Horse Type.

Four distinct types as to form and use.

1. Draft. Large, massive, broad, strong bone, large feet, moves very heavy loads, not expected to trot, used on city streets, weight, 1600-1700 pounds.

2. Expresser. Smaller than draft, more active, draw quite heavy loads but must trot when not loaded, express and baggage in cities, and general work on farms, weight about 1400 pounds.

3. Carriage. Medium size, round body, fine head, long arched neck, good bone, good hoofs of medium size,

high action at knees and hocks, very stylish and showy, weight 1200-1300 pounds.

4. Roadster. Light, rangy, excellent quality of bone and muscle, not necessarily handsome, speed and endurance the essential thing, the race horse of fairs and race meets, weight 900-1100 pounds.

(b) Horse Breeds.

1. Draft type is represented by the following breeds:

Clydesdale. The draft horse of Scotland, body long but rather shallow for length of legs, head rather long and narrow, with a tendency to the Roman nose type, legs strong and well muscled, with a growth of long hair at the back, the portion below the knees and hocks with a broad, flat bone. This last characteristic is much sought by horsemen and is highly developed in the Clydesdale breed. The breed has other good qualities in a large, strong hoof and long sloping pasterns (portion between the hoof head and fetlock joint). If the pasterns are long, and sloping at an angle of about 45 degrees they serve as an excellent set of springs, thus taking off much of the jar that would otherwise affect the horse.

Percheron. The draft horse of France, body deeper and more massive than in the Clydesdale, rump short and sloping, neck well set on shoulders, head clean cut and intelligent, leg bones and hoofs of good quality but both rather small for the weight of the horse, pasterns with a tendency to be short and lacking in slope, legs without long hair.

Shire. An English breed much like the Clydesdale but deeper and more massive of body, giving greater weight. The bone of the legs is large and strong but not as flat as in the Clydesdale. The legs in this breed have the hairy growth at the back.

Belgian. This is the draft breed of Belgium and is the heaviest of all the horse breeds. These animals are short and deep of body with short legs, and feet too small for the weight. On account of their weight and blocky form they are a very popular breed in America.

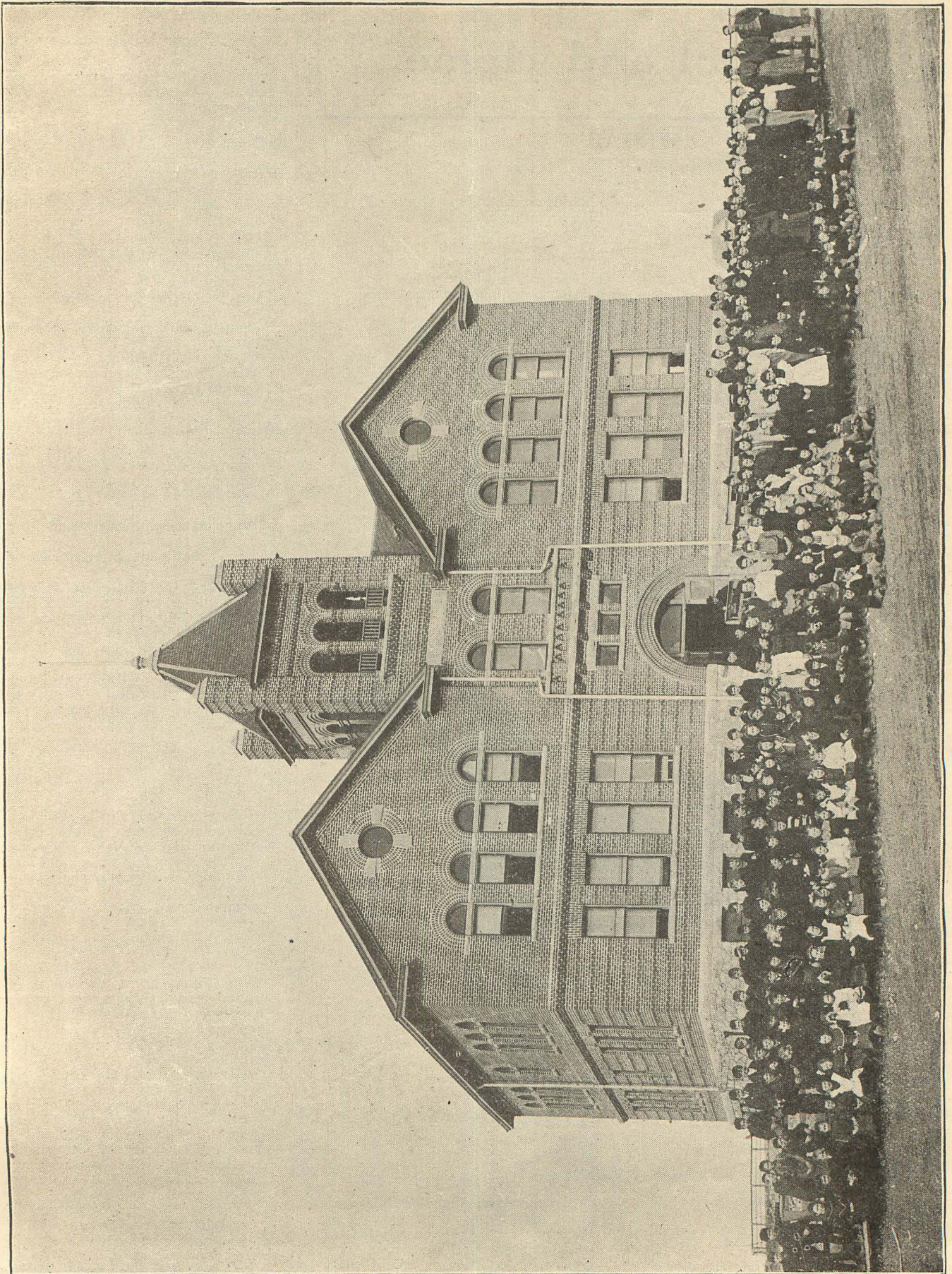
Suffolk. The Suffolk is also an English breed, but owing to its lack of size has never been as popular in America as the heavier breeds. These horses are rather low set, of round body giving them greater power for their weight. They are always chestnut in color.

3. Carriage type is represented by the following breeds:

Hackney. The Hackney is perhaps the most typical of all the carriage or coach breeds. He is not so tall as the others, and lighter in weight but excels in style and action. He is English in nationality and varies greatly in color. Chestnut, bay, brown, black, roan, and sorrel are all in evidence.

French Coach. This horse is somewhat taller and longer of body than the Hackney. He trots with more of a long sweeping stride and is capable of greater speed than the high and stylish action of the Hackney would permit. The color is bay, brown, black, and chestnut.

German Coach. This breed is



Five years ago a teachers' agency notified a teacher of a position at Kenmare. The teacher replied, "I do not dare start, for I do not find Kenmare on the map." It's there now.

still larger and longer in both body and leg than the French Coach. The breed is sometimes criticised as having a tendency to lack in quality and refinement. The colors are bay, brown, and black.

Cleveland Bay. This is an English breed and the largest of the coach type. The head is regarded as lacking in refinement, while the limbs have not as much quality as the best market demands. In action the movement is strong and powerful but not stylish. The color is always bay.

4. Roadster type is represented by the American Trotter.

There are several families, each named after some famous sire who originated the family or strain. The most noted of these families are the Hambletonian, Mambrino, Morgan, Clay, Pilot, and Hal.

(c) Care and Use.

1. Stables. Should be warm, sanitary, and comfortable. The horse kept in a good stable will require less feed, will be in better condition, will be less liable to disease, will do his work more faithfully, and will be more contented and companionable.

2. Feed. Should be plentiful, clean, wholesome, and given regularly. Musty hay produces the disease known as "heaves," irregularity of feed, water and work lowers the vitality and efficiency.

3. Water. Clean, given often in hot weather. Five or six hours is too long for even a horse to work in the harvest field without a drink.

4. Protection. From cold in winter, from flies in summer. Do not compel a horse to stand tied to a post for a long time on a winter day or evening. If he must be so tied let it be for a short time only, and then give him a good blanket.

5. Management. Whipping is very seldom, if ever necessary. Horses do what is required of them so far as they understand it.

6. Breaking Colts. This should be a process of teaching rather than conquering or subduing. A young horse should not be expected to learn everything required of him in a few minutes or hours or days. Patience and judgment should be exercised.

It pays from both a financial and humane standpoint to give horses good care and treatment.

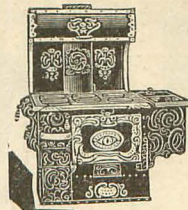
HOW TO GET CHEAPER MEATS

K. C. Neilson

People who live in towns and use considerable meat can save money by buying dressed beef by the quarter, pork and mutton the same. Have it cut into roasts, steaks and boiling pieces, ready for cooking. Let each piece freeze separately; then, clean paper wrapped about it; put in a clean box and place in the cold side of a shed on the north side away from the sunny wall.

Some pack meats in dry snow. If there are no thaws it will keep well.

Fish frozen and packed in snow are kept for several weeks unchanged. When taking frozen meats out to prepare for cooking, let them thaw gradu-



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ally, better than drawing out the frost in cold water.

Meats treated this way are not injured by being **once** frozen, but freezing repeatedly is not wholesome.

Poultry may be kept several weeks this way. Light and air change their color, therefore wrap them nicely after having frozen as soon as possible after being dressed.

Quantities of fine meat can be procured of farmer's if they know it is in demand by customers. The writer has known eastern farmers who had orders for months in advance of the "killing season" for prime beef, "pig" pork and poultry all cut up and delivered in the most desirable manner. Mr. So-and-So became acquainted with his customer, and his supplies did not vary in years; he was reliable and studied to hold good customers. Another farmer was noted for delicious sausages, seasoned to perfection, another for prime prints of butter, and the first "run" of amber colored maple syrup.

No middleman could deliver it **second-hand** as toothsome as the producer could onto **your** table.

Now that is **pure food**. Did not Mr. Farmer give identity to each individual consumer in his products? Some liked more lean, some fat, some demanded butter rather fresh, others salted more. This way brings the producer and consumer together, both learn each are human and civil and no middlemen or vender to abuse.

One woman drove into our door-yard as she was going to town and had in her buggy a basket of eggs. The eggs were very dirty, shining with age and fragrant too. I inquired, "Can you market those eggs at the store?" "Oh yes, they are as good as the price 10 cents per dozen." She was not stinulated by her customer's choice evidently, and at the same time this woman was putting down the price of fresh eggs, "just store eggs." If farmers or their queenly home-makers would study to make attractive their products at a reasonably paying price, they would soon have a list of the best living families in town and **some** consumers would soon offer better prices rather than be dependent on the ordinary market. County prod-

ucts **at home** are tried and tested as being healthy; robust farmers live on the best of food; the children thrive, study nature and are quicker students.

It pays to be distinguished for something worth doing, that is **success**. Appreciation encourages well doing in any community.

Methods of cooking Meats

Boiling is cooking in boiling water.

Steaming is cooking over boiling water. That is why double boilers are used in many institutions, "U" of N. D.

Stewing is cooking in a small amount of water a long time, at **simmering** point, thus the coarser and cheaper meats may be made more palatable and nutritious.

Braising is a form of stewing in a covered pan in the oven and more delicious than boiling. It renders tough meats tender.

Baking is cooking open to the dry heat of an oven.

Broiling is cooking over the intense heat of a clear fire.

Frying is cooking by immersion in fat at a temperature of about 385 to 400 degrees.

Sautering is frying in a small quantity of fat and is one of the most abused forms of cooking.

Your Xmas turkey was braised in the savory roasting pan.

THE PROFESSION OF FARMING

Hugh J. Hughes

To the educated young man, or woman looking for a career of useful independence, farming, the world-old labor and the newest of professions, invites careful consideration.

The successful farmer of today is, first of all, a business man. His methods are as exact as those of his city friend in the store or counting house. His work is planned with an exactness never dreamed of by his father. His hours of labor are set within reasonable limits. He knows the value, not only of time, but of a rested hand and a clear brain. He studies the *small economies* of labor, rather than the *petty economies* of the home. His business is to get results, direct results, the largest possible results obtainable.

The farmer of today is a well posted man. His general information will compare favorably with that of any other class of men engaged in gainful labor. The unread farmer is with us. Probably he always will be, but he is in the minority so far at least as influence is concerned, and his numbers are steadily lessening. The farmer who keeps abreast of the times is to the fore today. He reads more, thinks more, works less than did his father. He is a freer man. He is a free man!

The modern farmer is a progressive man. He is alert to the value of new discoveries in science wherever they touch his labors. He uses the best machinery. He is a breeder of grains and grasses and stock. He stands for better schools, better roads, better transportation, better mail and express service, better government.

The farmer of today is a social man. The rural mail brings him into daily touch with the world. The latest magazines teach him the most modern discoveries in science. He gathers from them a fair reading knowledge of art and the drama. The latest in fiction and, in fact, the best in all literature, are his. The telephone puts him in direct social touch with his neighbors. The feeling of loneliness that once made the farmer's life almost unbearable, is past. He is a part of the world, keeping step to its drumbeat. He is alert, self-reliant, social.

With such a field of labor to enter, the young man leaving college may have no fear that his education will be lost or come amiss on the farm. In fact, the crying need of the farm today is for men of education, men who look upon farming as a profession worthy their best skill and training.

Farming is a secure business. It deals with the production of the necessities of life, hence its products always are in demand. It gives good average returns for the capital and skill invested. It offers to any man of industrious, frugal habits, not only independence, but largeness of living—the best of air, the best of water, the best of food. Farming is a safe business.

Farming is a complete business. No other calling demands as much of mental and mechanical knowledge and precision as does farming. The daily round of the farmer's life calls for wide knowledge and broad adaptation to conditions. The farmer cannot become an automaton. He cannot become a machine. He must be broad, thoughtful, creative.

Farming is an undeveloped business. It touches only the borderland of its possibilities. It has more unsolved problems than any other calling. Would

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The only true Meat Chopper—the only chopper that has razor-edge, four-bladed steel knife and perforated steel plate that actually cuts meat, fish, vegetables, fruits, bread, etc. without crushing or mangling.

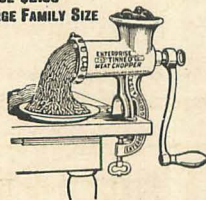
The "ENTERPRISE" is the strongest chopper made—has the fewest parts—is the simplest in construction. Easily cleaned. Cannot rust.

For Sale at Hardware and General Stores Everywhere.

No. 5, Small Family Size Chopper, \$1.75. No. 10, Large Family Size Chopper, Price, \$2.50.

"ENTERPRISE" Meat and Food Choppers are made in 45 sizes and styles for Hand, Steam and Electric Power. We also make cheaper Food Choppers but recommend the above. Illustrated catalogue FREE.

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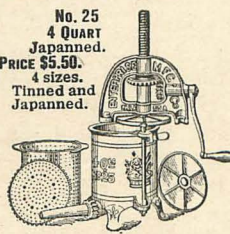
It is strongly made and every part does its work without a hitch. Plate fits perfectly and cylinder is bored absolutely true. Pressure will not cause meat to rise above plate. The patent corrugated spout prevents air entering the casing, thus assuring perfect filling and preservation of sausage.

Can be changed into a Lard or Fruit press in a jiffy.

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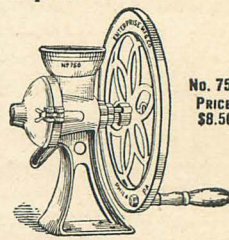
Grinds dry bones, oyster and other shells, corn, etc. Pays for itself in a short time. Size shown in illustration (No. 750, Price \$8.50, weight 60 lbs.) grinds 1 1/4 bushels corn per hour.

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you gain fame and untold wealth? Build a successful grain shocker. In a thousand other ways man's mechanical genius can be, needs to be developed. We need more grains and harder grains; more grasses; more fruits; vegetables. We need to improve the edible quality of many of those we possess. We can largely increase the yield. We can widen the limits within which certain plants may profitably be grown. Can we control the rainfall? Can we subdue the sub-arid regions and render them profitable agriculturally? Can we develop a working system of meteorology that will look across a season, and bid one prepare for drought? Who will solve the good roads problem? Who will enable the farmers to buy and sell in the most advantageous market, without hinderance? Who will help them to equalize the burden of taxation, of which they bear a share altogether too heavy?

These are problems for educated men. But primarily these are farmers' prob-

lems. The man who would help in this work must know the feel of the soil. He must dilate his nostrils with the ozone of the dawn. Books will not solve them. Laboratories will not solve them. Theories will not solve them. Well-meant efforts by men in other professions will not solve them. The time is here when the farmer himself must be the builder of his profession, enlarging it from within, adding to it consciously, skilfully, scientifically.

Such a profession has dignity innate in itself. It has value beyond the estimates of money. It brings competence and health and largeness of mental vision. It is full of unexplored mysteries. It is an ideal profession, because its limits never can be found—there is always something over and above the attained knowledge—something to look forward to. Something to employ the hands, and feed the body, and enlarge the soul. It is, and shall still more in future become, a scholar's profession.

THE BEEF CARCASS

Divisions and Sub-divisions of Commercial Cuts

Comparatively few of the American house wives are familiar with the various portions of the beef carcass. With the majority the demand of the butcher is for "a good roast," "a good beef steak," or "a boiling piece or pot roast." They take what the butcher gives them and pay the price demanded with little or no knowledge as to the comparative value of the cut purchased. All are familiar with the fact that the loin and ribs are the best part of the carcass and it is perhaps for this reason that fully 80 per cent of the demand is for cuts from the loin or ribs. This part of the carcass constitutes only about 25 per cent of the whole, and thus the great bulk of the demand is for the smallest part of the carcass. This is the real reason why cuts from the loin and ribs cost from two to five times more than cuts from any other part of the beef. With the supply of cattle decreasing and the demand for beef increasing, the time has come when the American house wife must educate herself regarding this subject and be able to make her purchases to fit her pocketbook, and at the same time secure good edible meat containing as much, or more, nutriment as the more expensive cuts. The following simple rules should be remembered:

1. Remember first that it is all in the cooking and preparation. A piece of beef from a cut that will cost four to ten cents per pound can be made as attractive, appetizing and nutritious as a cut from the loin that will cost from 25 to 35 cents per pound.
2. Insist upon seeing the carcass from which the meat is to be cut. See that it carries the stamp "U. S. Inspected and Passed," which is a guarantee from the government that the meat is healthy.
3. A prime piece of meat will not only carry an outside covering of fat, but all thru the lean meat will be small specks of fat, giving it a marbled appearance. With a little experience anyone can tell good meat from poor.
4. In cooking beef remember that the sap or juice of the beef is one of the most

important parts of the meat. It should be so cooked as to retain these juices. This is best done, in the case of a steak, by searing on the outside. In broiling a steak, place close to the fire at first, turning frequently until the outside is seared brown. Then so place it that it can cook slowly until done. Remember that rare meat does not mean raw meat. Meat cooked rare has a bright pink appearance. If not cooked it will have a bluish purple color. When beef is rare it is cooked in its own sap.

5. Beef should not be fried in grease. For convenience it may be cooked upon a hot frying pan or skillet. In this case use no grease and turn the steak over two or three times to sear the outside and retain the sap. Never cook beef in boiling grease.

6. In roasting beef have the oven very hot before putting it in. This will sear

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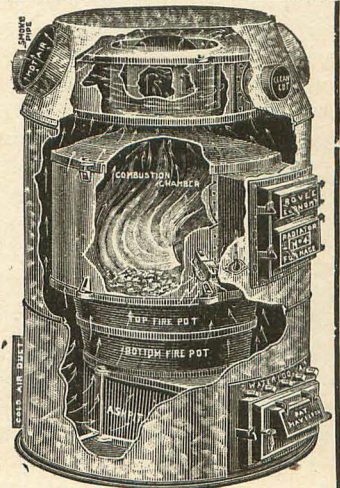
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the outside and seal in the roast should be turned a time or two at the beginning and then lower the temperature of the oven slightly and let it roast until done to the point desired.

7. Pot roast should be parboiled and finished with very little water, and kept covered. A good plan is to first boil tender, then take off the water and finish by roasting in the oven.

8. Do not have the bone cut out of a roast. It cooks better and is sweeter with the bone left in. The bone also helps to hold the sap in the meat.

9. Disabuse your mind of the idea that it is not fashionable to place the cheaper cuts of beef on your table. The meat bills of the highest salaried chefs of the wealthiest families are much smaller than the average bill of the average American cook.

GO INTO THE POULTRY BUSINESS

There is no legitimate business that can be started upon less capital and made to yield so good returns for the money invested as the poultry business. There is hardly a town in this country but what there are instances to prove this assertion. Unlike some other kinds of business there is no fixed limit to the profit per hen that can be made. The amount of income does not depend so much upon the hens, breed or variety kept as upon the management of the keeper. For this reason the business is very fascinating and keeps alive that interest and enthusiasm which often wanes in a less interesting pursuit. The hen is a machine so to speak. She is properly adjusted by nature to produce eggs and in these eggs are numerous possibilities and it remains for us to get the largest possible returns. There are so many things to be taken into consideration as to the profit in keeping a certain number of hens that to give any stated amount might be altogether misleading.

Poultry farming when carried on with diversified farming is one of the most profitable branches of farm work considering time and money invested. If the poultry keeper on a town lot who has everything to buy can make a good profit with poultry how much more can the one do who lives on the farm where the fowls are able to pick up greater portion of their living and have plenty of green food. A great deal is converted into cash which would otherwise go to waste.

SALT FOR FOWLS

It is a prevalent notion that salt is poisonous to fowls and this popular impression is based on many unhappy experiences with it when fed too liberally. Of course salt is poisonous if fed largely



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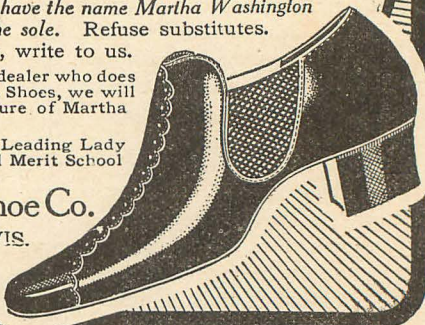
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but on the other hand it is beneficial when fed in moderate amounts, that is, at the rate of one ounce to 100 adult fowls per day. It is true that fowls have been killed by eating salt and by having their food mixed with water in which salt meat had been pickled. The careless throwing out of rock salt, bits of which the birds eat under the impression they are grit, is the most usual way of killing fowls with salt.

FARMER RESIDENTS OF THE TOWN

A statistician has been thrown into consternation by the discovery that in Kansas the farmers are moving into the towns, and cries that "This is really a serious problem." To those who agree with Secretary Wilson's statement that the farmer of the west enjoys luxuries unknown to the eastern urban dweller, this is not startling. There is no reason, they urge, why the farmer, who has acquired a surplus of prosperity, should not enjoy it. The telephone has relieved the farmhouse of its isolation. The automobile has brought it next door to the county seat. The farmer's wife and daughter wear diamonds and adorn themselves with gowns and millinery of Parisian models. Gas and electricity prolong the winter days. The farmhouse has hot and cold water, and baths more luxurious than those of old Rome. The kitchen is a shining model. Machinery has converted farm toil into pleasure. The wealthy farmer does with it almost everything except to milk the cows, altho even this is on the verge of a mechanical process.

The farmer, states the Washington Herald, is his own master. He may live both in town and country. His acres, with the rain and sunshine and mechanical cultivation, spell his emancipation. There is in all this no sign of decay. The farm will not be permitted to fall into neglect, nor will the art of agriculture decay. On the contrary, the source of wealth will be made to yield yet more abundantly. It is the people who are not farmers and who must pay climbing prices for milk and eggs and meat to whom the sociologist should devote his anxious attention.

ALCOHOL FROM SWEET POTATOES

The Department of Agriculture has been experimenting for some time on the manufacture of denatured alcohol for engine fuel. It has worked with all sorts of fruits, both sweet and Irish potatoes and sugar beets and turnips. It has been found that there is a considerable amount of alcohol in the watermelon, but the most promising crop so far tried is the sweet potato.

It is said that with the current value of the sweet potato in the southern states it is possible to make denatured alcohol for 20 cents a gallon. This is a good deal less than denatured alcohol sells for on the market, and the outlook is said to be good for all the south Atlantic and Gulf States. It is explained, however, that there has been a greater demand for alcohol since the free alcohol bill passed and the result is that the price has gone up instead of down.

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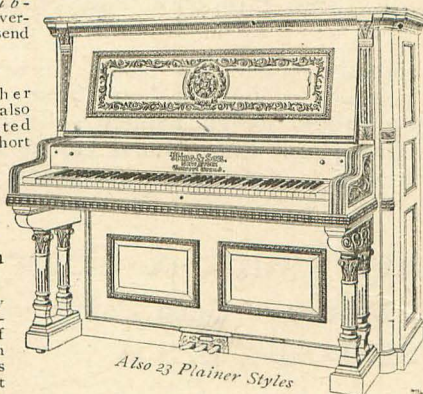
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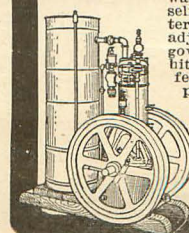
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